

To: Memorandum to Remedial Investigation/Feasibility Study Administrative File

From: Julie Keating, CH2M Hill, x2505

Date: September 18, 2006

RE: Response to CDPHE and EPA Comments to Appendix A, Comprehensive Risk Assessment, of the October 2005 Draft RCRA Facility Investigation – Remedial Investigation/Corrective Measures Study – Feasibility Study Report for the Rocky Flats Environmental Technology Site

The Colorado Department of Public Health and Environment (CDPHE) and the Environmental Protection Agency (EPA) Region VIII provided comments to Appendix A, Comprehensive Risk Assessment, of the October 2005 Draft RCRA Facility Investigation – Remedial Investigation/Corrective Measures Study – Feasibility Study Report for the Rocky Flats Environmental Technology Site. A response to comments was prepared for each of the comments formally transmitted. Attached is the response to comment file.



CRA-Comment-Response-FINAL.pdf



ADMIN RECORD

1/158

SW-A-005898

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Intro		Vols 1-15 App. A	The following are the comments resulting from a review of Appendix A, Draft CRA, Volumes 1 through 15. Except where specifically noted, the Human Health portions of each of the volumes reached the appropriate conclusions and there are no specific comments. Therefore, the following comments are primarily related to the ecological risk assessment portion of the CRA. Draft CRA Volumes 3 through 14, related to the terrestrial Exposure Units (EUs) are generally well-written and clearly organized. However, as noted in the following comments, there are several issues that warrant consideration. The review identified that there were issues that were repeated and common for Volumes 3 through 14. Therefore, as seen below, a general set of comments applicable to Volumes 3 through 14 have been grouped together.	See responses to General and Specific comments below.
	EPA	General	ES-G1	Vol 1 - Exec Summ	<b>VOLUME 1 – EXECUTIVE SUMMARY</b> In general, the intended audience and objective for the Draft Rocky Flats CRA Executive Summary is questioned. The executive summaries of risk assessments typically provide a condensed version of the full risk assessment along with faithful reproductions of pertinent figures, tables, and graphs. This Executive Summary is more of a cross between a typical executive summary and a fact sheet, intended for the general public. Much of the text, figures, and tables were over simplified in an attempt to make the document understandable to the lay public. In the process, many important points are lost or unclear. It is recommended that the Executive Summary be revised to provide a condensed version of the results rather than a generalized fact sheet. As indicated below, these results should be integrated into one RI/FS Executive Summary.	In response to regulatory agency comments that the RI/FS report include an entire section that summarizes the CRA, Section 7 of the Final RI/FS report was prepared. The Parties agreed that the approved text of the RI/FS Section 7 text would be used for the Executive Summary (ES) of the CRA. A revised CRA ES/RI-FS Section 7 was prepared, and it included text, table, and figure revisions that were responsive to the EPA CRA ES comments. The Section 7/CRA ES text provides more details of the CRA methodology and findings pursuant to this VOLUME 1 - EXECUTIVE SUMMARY comment. It was reviewed by the Parties in June 2006, and approved.
	EPA	General	ES-G2	Vol 1 - Exec Summ	As stated in comments on the main text of the RI/FS, it is recommended that the RI/FS be revised to include only one Executive Summary (rather than having one for the RI/FS and one for the CRA), which should be presented at the beginning of the RI/FS. The following comments are designed to assist in identifying areas where the CRA portion of the Executive Summary should be revised:	See comment response above.
	EPA	Specific	ES-S1	Vol 1 - Exec Summ	Page ES-4, Section 2.0, last paragraph: The Aquatic Exposure Unit (AEU) summary should be followed by a bullet-by-bullet summary of the AEU-specific characteristics and potential source areas, similar to the list presented for each terrestrial Exposure Unit (EU).	These details are provided in Volumes 15B1 and 15B2. They will not be included in the Executive Summary for the purpose of brevity.
	EPA	Specific	ES-S2	Vol 1 - Exec Summ	Page ES-4, Section 3.1, last paragraph: As noted numerous times in previous comments, the statement that "data are adequate for the purposes of the CRA" is an over-simplification of the Data Adequacy Report conclusions and does not address any of the potential data limitations and biases associated with the underlying datasets utilized in the CRA. Please revise the statement to indicate that the data are generally found to be adequate, however, there are certain limitations to some of the data sets which have been discussed in each volume of the CRA and noted in the uncertainty sections of the reports (NOTE: data limitations have not been completely addressed in the Draft CRA, however, this issue should be addressed in revisions to the document in accordance with comments on Volumes 2 through 15).	The requested change will be made.
	EPA	Specific	ES-S3	Vol 1 - Exec Summ	Page ES-5, Section 3.2, 1st sentence: While it is recognized that this statement is intended to demonstrate the sheer volume of data available for RFETS (2 million data records), as written the term "record" could potentially be misinterpreted as "samples", which is incorrect. Recommend revising the statement as follows: "...approximately 2 million data records (from X,XXX unique samples site-wide)...".	Reference to the number of data records will be deleted, and a more detailed description of the types of data available for the CRA will be provided.
	EPA	Specific	ES-S4	Vol 1 - Exec Summ	Page ES-5, Section 3.2, paragraph after first bullet list: The rationale provided for why surface soil and surface sediment data were combined for the HHRA (i.e., "because both are surficial media and the exposure patterns are assumed to be similar") also applies to terrestrial wildlife receptors. It should be clarified as to why terrestrial wildlife evaluated using a dataset comprise only of surface soil.	The use of surface soil data only for terrestrial wildlife receptors is in accordance with the CRA Methodology. The majority of the samples in the combined data set (i.e. surface soil/surface sediment) are soil samples and the data adequacy evaluation (Volume 2, Attachment 3) indicated these soil data are adequate for the terrestrial ERA. No change will be made to the text.
	EPA	Specific	ES-S5	Vol 1 - Exec Summ	Page ES-5, footnote: This footnote is in error and should be revised as follows: "All samples with a starting depth less than or equal to 0.5 feet bgs and an ending depth less than 8 feet bgs were included..."	The footnote is correct as stated. No change will be made to the footnote.



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	EPA	Specific	ES-S6	Vol 1 - Exec Summ	Page ES-6, Section 4.1: In Step 1, and later throughout the document, the term “acceptable” concentrations appear. It is not clear what this means, and the use of the word with quotation marks around make its use more comfortable. The maximum detected concentrations or UCLs are compared to conservative screening levels. The purpose of these screening levels is to focus the quantitative risk assessment on the analytes which may pose an adverse risk to the receptors at a site. Concentrations below these levels are considered de minimus and not thought to pose any adverse health concerns. The screening levels were set at a 1E-06 cancer risk level and 0.1 non-cancer risk level to account for cumulative effects from multiple contaminants. The document should be clarified to say this.	References to “acceptable concentrations” will be deleted.
	EPA	Specific	ES-S6	Vol 1 - Exec Summ	In addition, the non-cancer screening level should be 0.1 not 1.0 as currently written in Step 1.	The non-cancer HQ will not be referenced in the text. It is referenced correctly in Figure ES.3.
	EPA	Specific	ES-S7	Vol 1 - Exec Summ	Page ES-7, 1st full paragraph: In what appears to be an attempt to simplify the document, the first paragraph pertaining to COCs in some EUs or media, but not others, is confusing. From a casual reading it sounded like only 5 of the EUs were even evaluated. It would be helpful to expand this paragraph to fully explain how all of the media and EUs were evaluated using this screening process. Because max values were below background or risk-based screening values, certain media and EUs didn’t have COCs. And then, those EUs and media which did have COCs were evaluated quantitatively in the risk assessment process.	The second paragraph of Section 5.1 will be revised to indicate that the COC selection process was applied to each EU.
	EPA	Specific	ES-S8	Vol 1 - Exec Summ	Page ES-9, Last full paragraph: The term “acceptable concentrations” shows up again here. See comment #1 above.	The reference to “acceptable concentration” will be deleted.
	EPA	Specific	ES-S9	Vol 1 - Exec Summ	Page ES-10, Ingestion of Deer and Grazing Animals: It appears that something got lost in the translation from the evaluation of this pathway. Simply saying that a risk is less than 10% of the total is not helpful if the total risk is highly elevated and well above action levels. Please expand this section to include more of the actual report.	The section will be expanded as suggested.
	EPA	Specific	ES-S10	Vol 1 - Exec Summ	Page ES-11, Section 4.2.3: Since Section 4.2.2 was “Evaluation of Insignificant Pathways”, shouldn’t this section be entitled “Evaluation of Complete and Significant Pathways”? The document flow doesn’t make sense otherwise.	Discussion of complete and significant pathways is provided in Section 5.2.1 (formerly 4.2.1). The title of Section 5.2.2 will be “Evaluation of Surface Water, Indoor Air, and Ingestion of Deer and Grazing Animals Pathways.”
	EPA	Specific	ES-S11	Vol 1 - Exec Summ	Page ES-12, Section 4.3: The text in Section 4.3 on the Toxicity Assessment has been simplified too much. It would have been more helpful to include more of the text from the Comprehensive Risk Assessment.	The section will be expanded as suggested.
	EPA	Specific	ES-S12	Vol 1 - Exec Summ	Page ES-12, Section 4.4: Please spell out “COC” and “CSF” in the first paragraph. There appears to be missing text after 1 in 10,000.....	COC and CSF are previously defined in the Executive Summary. The words “to be” will be inserted after 10,000...
	EPA	Specific	ES-S13	Vol 1 - Exec Summ	Page ES-13, 1st full paragraph: It is recommended that it be reiterated that all of the EUs were evaluated, but only 5 of them had COCs which were taken through the quantitative risk assessment process, and here are the results.	The text will be revised to indicate that risk estimates were calculated for the 5 EUs where COCs were identified.
	EPA	Specific	ES-S14	Vol 1 - Exec Summ	Page ES-13, Section 4.5: The Uncertainty Discussion appears to be very one-sided. It would be helpful to use more of the text from the Comprehensive Risk Assessment and present a more balanced discussion of the uncertainties which contribute to underestimating the risk as well as overestimating it.	The section will be expanded as suggested.
	EPA	Specific	ES-S15	Vol 1 - Exec Summ	Page ES-13, Section 5.0: This section should be revised to explicitly identify the ecological receptors of concern, including the selected representative wildlife species, evaluated in the Ecological Risk Assessment (ERA).	A new table (ES.9) will be prepared to identify the ecological receptors of concern.

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	EPA	Specific	ES-S16	Vol 1 - Exec Summ	ES-14, Section 5.3: Other sections within the Executive Summary already present a summary of the data quality assessment, data adequacy evaluation, and the types of Exposure Point Concentrations (EPCs) utilized in the ERA, which are all part of the Data Quality Objective (DQO) procedure. Therefore, it is not necessary to reiterate that the ERA was performed in accord with DQOs. In addition, the statement that "...tolerable error limits and rules for optimization of the ERA design were provided [in the CRA Methodology]" is not true. As seen in the CRA Methodology, the Type I and Type II error rates were "undefined" for the purposes of evaluating ecological risks, and the data adequacy evaluation did not include any design optimization changes due to quantitative power calculations. This entire section should be removed.	This section will be removed.
	EPA	Specific	ES-S17	Vol 1 - Exec Summ	ES-16, Section 5.4, Step 4, Aquatic Receptors: The text should be revised to identify the basis of the Exposure Point Concentration (EPC) used in the risk assessment when calculating Hazard Quotients (HQs) for aquatic receptors, similar to the summary provided for terrestrial receptors.	The subject text will be deleted and the section will be simplified and will reference Figure ES.8.
	EPA	Specific	ES-S18	Vol 1 - Exec Summ	ES-16, Section 5.5: This section should be revised to clarify that potential risks to wildlife from ingestion of ECOPCs in food items were calculated based on literature-based soil-to-tissue bioaccumulation factors (BAFs) and uptake regression models, not measured tissue concentrations.	These details are provided in Volumes 3 through 15. No change will be made to the text.
	EPA	Specific	ES-S19	Vol 1 - Exec Summ	ES-18, Section 5.6, last paragraph, 2nd to last sentence: As noted in the AEU-Specific Comments, in the aquatic risk assessment for surface water, the default ESLs (as identified in the CRA Methodology) were usually based on the chronic Ambient Water Quality Criteria (AWQC) and the "alternative" toxicity (AT) values were usually based on the acute AWQC. The basis and interpretation of the acute AWQC is very different than the chronic AWQC. Therefore, it is important that AT not be interpreted as an "alternate" estimate of the default ESL. In addition, both the chronic AWQC and the acute AWQC are effect-based criteria, and it is not appropriate to make statements to the effect that the surface water ESL (chronic AWQC) is a NOAEL-based value and the surface water AT (acute AWQC) is a LOAEL-based value.	The text will be clarified.
	EPA	Specific	ES-S20	Vol 1 - Exec Summ	Page ES-18, Section 5.7.1: This section describes the process used in the terrestrial risk assessments for each of the EUs to interpret soil HQs with regard to risk potential. However, this is not the procedure utilized in the aquatic risk assessment when interpreting surface water and sediment HQs. For aquatic receptors, population-level effects were based on the frequency and magnitude of sample HQs above 1. This section should be revised to present a summary of the approach used to interpret potential risks to aquatic receptors from surface water and sediment.	Additional detail regarding the defining of risk potential in the aquatic ERAs will be provided.
	EPA	Specific	ES-S21	Vol 1 - Exec Summ	Page ES-19, Risk Description/Summary Table ES.10: Neither the Risk Characterization, Risk Description, or Table ES.10 present sufficient information on how risk conclusions were determined using the available information presented in the ERA. Section 5.7.3 should be revised to include the following information for each EU/AEU: a summary of the risk assessment conclusions based on the calculated HQs (e.g., low to moderate risk potential), other available lines of evidence, uncertainties that were important in interpreting potential risks, the risk management conclusions (e.g., no significant risks), the relative confidence in the risk conclusion. Table ES.10 should be revised to present the summary of risk conclusions (e.g., no risk, low risk).	Table 11.1 in Volumes 3 through 15 currently presents the risk conclusions for each receptor group and EU/AEU. More detail will be added to Table ES.10 to clarify the risk conclusions, and a footnote will be added to note uncertainties in the risk conclusions.

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	EPA	Specific	ES-S22	Vol 1 - Exec Summ	Page ES-19, Section 5.7.2, 2nd paragraph, 2nd sentence: The text states that uncertainties related to ECOPC concentrations in prey tissues were "...because very little food tissue data were available for use". This statement implies that HQ calculations were based on measured data, which is not true. Alternate HQs were calculated using median BAFs because use of the 90th percentile BAF may tend to overestimate tissue concentrations from soil. This statement should be deleted.	Given the details provided in the previous sections on the use of exposure models for estimating risks, the statement does not appear to be misleading in the context of an uncertainty discussion. No change will be made to the text.
	EPA	Specific	ES-S23	Vol 1 - Exec Summ	Page ES-20, Section 5.9: It is unclear why background risk estimates were not calculated for surface water or sediment, especially given that site HQs for several ECOPCs were above 1 in some AEUs. The use of background risk estimates in interpreting site risks is equally important for all media, not just surface soil. Please clarify why background risks are not calculated for surface water and sediment.	Background risks will be calculated for surface water and sediment in the revised CRA and described in Section 6.8 of the revised Volume 1.
	EPA	Specific	ES-S24	Vol 1 - Exec Summ	Table ES-3: Table ES-3 which lists some of the exposure assumptions is not the same table as in the Comprehensive Risk Assessment. It is apparent that this is an attempt to simplify the document. However, it is important that the public understand the thorough job which was done evaluating all of the exposure pathways and assumptions for the various receptors at this site. Why not use the same tables as in the Comprehensive Risk Assessment?	The table will be replaced with the table from the CRA, Volumes 3 through 15.
	EPA	Specific	ES-S25	Vol 1 - Exec Summ	Table ES-4: It is not a problem listing the toxicity criteria for only the contaminants which were COCs, however, it should be explained in the text that hundreds of analytes detected at the site were evaluated against toxicity criteria. Also, the source of the toxicity criteria should be footnoted in this table.	The text will be modified to indicate that the toxicity criteria for non-COCs are presented in the CRA Methodology.
	EPA	Specific	ES-S26	Vol 1 - Exec Summ	Figure E7: The human health site conceptual model shown in Figure E7 is not the site conceptual model in the Comprehensive Risk Assessment. This is a much more simplified version. Why not use the model in the Comprehensive Risk Assessment so people are aware of the thorough job done in evaluating all possible pathways by which the receptors could be exposed? If there is some reason this figure is to be retained, "WRW" and "WRV" should be defined in this figure.	Figure ES.4 will be replaced with the CRA figure of the Site Conceptual Model.
	EPA	Specific	ES-S27	Vol 1 - Exec Summ	Figure ES.10: This illustrated site conceptual model does not identify several important ecological exposure pathways. For example, direct contact of terrestrial plants and invertebrates with surface soil and direct contact of benthic organisms with sediment are not included in this figure. In addition, the significant routes of exposure identified for fish is ingestion of surface water and sediment (identified as a red line). This figure should be revised to accurately portray the ecological exposure pathways.	The illustrated Site Conceptual Model will be deleted.



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	EPA	Intro		Vol 2	<b>VOLUME 2 – CRA METHODOLOGY AND DATA DESCRIPTION</b> In general, this volume is well-written and clearly organized, and it is clear that many of the previous comments on the pre-draft versions have been incorporated into this version. However, as indicated in the comments provided below, the review has identified several issues which warrant consideration.	See responses to General and Specific Comments below.
	EPA	General	V2-G1	Vol 2	<p>V2 G1. Data Description. Section 2.1 provides a general overview of data available and the approach for assessing data quality. However, the intent of the Data Description section should be to present a concise and specific description of the data used to assess risk. In addition, the Data Description sections provided in Volumes 3 through 14 (Section 1.1.2 in each volume) make reference to Volume 2 for the “detailed description of data storage and processing methods”. Neither the data used in the CRA, nor the data processing methods have been clearly documented. The text should be revised to present or reference the main text of the RI/FS for the overall description of available data and the database Soil Water Database (SWD) (please see RI/FS comments which request that the description of the SWD and associated dataset be clarified). While it is recognized that the EU-specific data descriptions are presented in Volumes 3-15, the text in this section (Volume 2, Main Text) is the place that should present a description of the types of data are used in the risk assessment. The data description should first clarify that the risk assessment objective is to evaluate risks from residual contamination following Accelerated Actions, and the text should explain that only post-removal data is used. Please clarify that pre-removal data at sites with Accelerated Actions is deemed No Longer Relevant (NLR). Examples of specific items that should be described include:</p> <ul style="list-style-type: none"><li>• Confirmation surface soil data used for locations where Accelerated Actions occurred,</li><li>• “Surface soil” at locations where Accelerated Actions has occurred are actually subsurface soil since imported clean backfill has been placed in the excavation (as indicated in Attachment 3, page 6),</li><li>• Depth assumptions for surface soil/sediment, subsurface soil/sediment,</li><li>• Types of samples used for each media type (e.g., grabs, composites, total, dissolved, etc.),</li><li>• CRA data rules (e.g., post 1991, maximum depth of 8 feet, etc), and</li><li>• Rules for using soil samples that are adjacent to water as sediment.</li></ul>	<p>Volume 2, Section 2.1 will be expanded to discuss the types of data and sample depth assumptions used in the CRA, and to reference Attachment 2 of Volume 2 for the data processing steps performed on the data to arrive at “CRA ready” data. Attachment 2 of Volume 2 will be revised to include a section on data processing that includes a complete list of reasons data may not be deemed “CRA ready”. Because the process used to arrive at “CRA ready” data was used for the RI (i.e., the same data are used for the RI and CRA, with a few exceptions [which will be highlighted]), the term will be changed to “RI ready”.</p> <p>One of the “RI ready” data processing steps is removal of surface water and sediment data that are for locations where there is no potential for human or aquatic receptor exposure to the water/sediment, e.g., data for sumps and manholes or features that no longer exist. These data are classified as No Aquatic Exposure (NAE) (see Attachment 2, Section 2.2 of Volume 2). It is noted that additional review of surface water/sediment sampling location descriptions since the October 2005 Draft RI/FS report was released indicates the data for the stations shown on Figure R1 and described in Table R2 should not be included in the “RI ready” dataset, i.e., they are now classified as NAE. They will not be included in the Final RI/FS and CRA as agreed to by the regulatory agencies in meetings during the Spring of 2006.</p>
	EPA	General	V2-G1	Vol 2	The data descriptions for individual EU volumes should be reviewed to ensure that all EUs and AEUs indicate when an Accelerated Action has occurred in the EU/AEU, indicate that confirmation samples are being used, and indicate the approximate depth of confirmation samples (assumed to be the surface soil).	Table 1.1 in each of the EU volumes indicates when an accelerated action occurred for an IHSS. Section 2.1 of Volume 2 has been expanded to discuss NLR data associated with excavated soil and the classification of confirmation samples from the bottom of excavations as surface soil samples. For each EU where the risk associated with a COC or ECOPC is elevated because of the surface soil classification of confirmation samples, this is addressed in the risk characterization.
	EPA	General	V2-G2	Vol 2	<p>V2 G2. ATTACHMENT 2: Data Quality Assessment (DQA). The DQA should be a review of the entire data generation process for every data point that is included in any part of the decision-making process. That is, the DQA should take the process as a whole from sampling to analysis to data validation to data qualification and report on the usability of the dataset given cues anywhere from field quality control (QC) samples to laboratory QC to geospatial trends. However, this DQA appears to stop short of: (1) exploring the potential reasons for poor QC sample results; (2) applying additional qualification as a result of a holistic data review; and (3) stating whether there is any other data used in decision-making that was not captured during this DQA review. Furthermore, the DQA as a whole reads more like an extended Executive Summary because insufficient detail is provided. As an example, Section 3.0 presents and discusses findings associated with each analytical group and matrix. While the conclusions reached in these sections may indeed be true, these sections, as presented, do not provide enough information to arrive at those conclusions. The summaries are overly generalized and do not provide specific details associated with the respective data to allow the reader to independently confirm the conclusions. Please provide additional information in the summary text</p>	<p>To address the various points, text from the Comment was copied and highlighted in italics for clarification.</p> <p><i>The DQA should be a review of the entire data generation process for every data point that is included in any part of the decision-making process. That is, the DQA should take the process as a whole from sampling to analysis to data validation to data qualification and report on the usability of the dataset given cues anywhere from field quality control (QC) samples to laboratory QC to geospatial trends.</i></p> <p>The text in Section 1 of this document will be enhanced to describe more clearly that the review process described in the above comment has been performed.</p> <p>The authors have applied the prescribed and agreed-upon Data Quality Objectives (DQO) as defined in Sections 3 through 5 of the RI and</p>

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					<p>to support the conclusions, such as:</p> <ul style="list-style-type: none"><li>• Percent of data qualified</li><li>• Percent of data rejected and reasons</li><li>• Trends associated with the data, possibly illustrated in graphs, tables and/or maps</li><li>• Impact of qualifications to the data set, by analytical group and sample matrix</li><li>• Numbers of QC samples collected, by location and analytical group, possibly presented on a figure</li><li>• Other pertinent information that would help justify the conclusions</li></ul>	<p>Section 3.1.5 of the Final Comprehensive Risk Assessment Work Plan and Methodology, September 2004 (CRA) to this data set. This data set was derived from the efforts of multiple agency-reviewed and -approved work plans and contains comprehensive data qualifier flags and validation reasons that describe data usability for each analytical record in accordance with these work plans.</p> <p><i>However, this DQA appears to stop short of: (1) exploring the potential reasons for poor QC sample results; (2) applying additional qualification as a result of a holistic data review; and (3) stating whether there is any other data used in decision-making that was not captured during this DQA review.</i></p> <p>The text in Section 3 of this document will be enhanced to more clearly describe the validation and verification that the data have undergone as prescribed in the approved work plans.</p> <p>The authors believe that using the data set to look for potential trends or to suggest findings that were missed by the thorough DQA process for each approved work plan could result in data qualification that is less accurate than currently represented in the dataset. And, because there is no standard to the holistic approach, that approach would be very difficult to defend. For example, when using this approach to determine duplicate precision, how does one decide whether it is most appropriate to examine field duplicate precision by matrix and location; or by matrix, depth, and location; or by matrix, depth and method; or by matrix, depth, and analyte because imprecision may be specific to any of the variables and would need to be evaluated according to the specific situation. The potential for adding improper data flags would outweigh any potential gain in site characterization by this exercise.</p> <p><i>Furthermore, the DQA as a whole reads more like an extended Executive Summary because insufficient detail is provided. As an example, Section 3.0 presents and discusses findings associated with each analytical group and matrix. While the conclusions reached in these sections may indeed be true, these sections, as presented, do not provide enough information to arrive at those conclusions. The summaries are overly generalized and do not provide specific details associated with the respective data to allow the reader to independently confirm the conclusions.</i></p> <p>The comment that Section 3.0 summarizes the findings and lacks sufficient detail will be addressed in the final version by more clearly delineating where additional detail can be found. For clarification, the section is intended to summarize the findings and the reader can find the details desired in the tables referenced in this section. This particular approach was taken in response to comments from an earlier version of this document where the reviewer suggested that these details should be placed in the following tables:</p> <p><i>Please provide additional information in the summary text to support the conclusions, such as:</i></p> <ul style="list-style-type: none"><li>• <u>Percent of data qualified</u><ul style="list-style-type: none"><li>- Table A.2.3 Percent of data qualified</li></ul></li><li>• <u>Percent of data rejected and reasons</u><ul style="list-style-type: none"><li>- Table A2.6. Percent data rejected. (The percentage of data rejected is discussed in Section 3.0). See response S2.31 for reason codes explanation.</li></ul></li><li>• <u>Trends associated with the data, possibly illustrated in graphs, tables and/or maps</u><ul style="list-style-type: none"><li>- See next response to comment section following these bullets</li></ul></li><li>• <u>Impact of qualifications to the data set, by analytical group and sample matrix</u></li></ul>

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						<ul style="list-style-type: none"> <li>- See next response to comment section following these bullets</li> <li>• <u>Numbers of QC samples collected, by location and analytical group, possibly presented on a figure</u></li> <li>- See next response to comment</li> <li>• <u>other pertinent information that would help justify the conclusions</u></li> <li>- Tables A2.1, A2.7, A2.9 provides other pertinent information.</li> </ul>
	EPA	General	V2-G2	Vol 2	Examples of data presentation alternatives depend on the type of QC sample and/or the trend to be illustrated. For example, duplicate sample comparisons are presented in graphical format. The graph is presented as original sample versus duplicate sample. All data points, including non-detect values, are shown. Non-detects are plotted at the reported ND value (e.g., as 0.1 for <0.1) and the line of identity shown to determine how close to a slope of 1 the duplicate pairs come. QC samples should also be mapped to help illustrate any trends geospatial/location. Specific recommendations on additional tables are presented in the comments below.	These types of data presentations to define PARCC parameters, such as precision of duplicates, are inconsistent with the DQOs defined in the RI and the CRA and the interpretation of these presentations does not follow any commonly accepted protocols. Generally, this DQA is based on the premise that the work plans, data validation efforts, quality assurance plans, and data evaluation activities that led to this data set were adequately designed and carried out. The agency and other stakeholders have had continuous oversight and input into the activities that led to the data that are in the RI/FS data set. No change will be made as a result of this comment.
	EPA	General	V2-G2	Vol 2	Additionally, there are various statements that appear repeatedly within this section and require additional information for each instance: “Transcription errors (and validator-calculated minimum detectable activities) have no impact on data quality....” Please provide additional information to justify these statements. These errors can impact data quality if they are not fixed correctly or not identified. Indicate the process taken to verify and correct transcription errors for samples that were subjected to V&V. Further, explain what confidence is placed on data that were not subjected to V&V with respect to ensuring transcription errors did not occur there. If non-V&V data cannot be held to the same confidence as V&V data, this must be explicitly stated, and the specific analyte(s) and/or sample media identified.	The process used to verify and correct transcription errors will be defined. The degree of confidence in data that were not subjected to V&V will be defined.
	EPA	General	V2-G2	Vol 2	“The percentage of all observations is low and within method expectations”. Please provide additional information on method expectations. That is, state the method expectations and how they were derived. Then, quantify the total number of observations and the number/percentage of observations that did not meet the referenced condition, and then explain why the frequency of QC samples that do not meet acceptance criteria are or are not acceptable. Further, explore the likely reason(s) for poor response. For example, it is not always sufficient to assert homogeneity of soils as the singular reason for poor RPDs. While soil homogeneity is always a concern, there may be more information illuminated by paying attention to the conditions and/or trends in the poor recoveries, especially when it is a particular location/area or analysis group that seems particularly affected.	Method expectations are extracted from the published methods’ documentation, and common EPA and other regulatory guidance documents. The numbers of observations and percentages are provided in Table A2.5. Exploration of reasons beyond the definitions described in Table A2.3 would require returning to the hardcopy data packages and validation reports and is not within the scope of this project. Although it was considered, it was concluded that the value added with this step does not warrant the additional labor and expense. No change has been made as a result of this comment.
	EPA	General	V2-G2	Vol 2	“This is more indicative of matrix interferences than an overall precision issue.” While it is true that matrix interferences can impact the overall precision of sample analysis, they are not the only reason for poor RPD values. The purpose of the well-rounded QA program, where several different types of QC samples are required, is to aid in identifying potential bias in the sample data. Duplicate analyses are a part of that overall QA program. RPD evaluations are a valid tool for determining precision of the analytical program, but must be augmented not simply by identifying the number of samples that did not meet criteria. That is, consideration for the analyte(s) and/or the sample matrix that is/are not achieving the acceptance is paramount. For example, this assessment should include a determination if the “problem” samples are all located in a similar region. Also, any assessment must specify the total number of samples and the fraction that do not meet acceptance criteria. Further, if matrix interferences are identified, provide information to support this conclusion. The results of these evaluations should be presented in the respective summaries.	The specific text will be modified to support the statement.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	General	V2-G2	Vol 2	"The noted omissions and/or errors do not impact data quality as the omitted data was not required for V&V." Firstly, define a V&V observation and explain what impact various kinds of observations may have. For example, V&V may result in observations that are purely contractual in nature and do not impact the overall quality of the data. They may be a transcription or other error, that once identified during V&V and corrected do not impact data quality. Or they may be serious, irreversible errors that do impact the data quality. Once this is added to the report, then add sufficient detail to the respective summary statements (as indicated in previous comments above) to allow for independent concurrence.	The V&V observations are defined in Table A2.3. The impacts of the observations were assessed during V&V through appropriate qualification of data. This is a specific observation associated with specific reason codes (802 and 804, as presented in Table A2.3). Alternative reason codes (801 and 803) were also used by reviewers to denote omissions that were required for data validation. Only data qualified with the former (reason codes 802 and 804) were described in this manner. No change has been made as a result of this comment.
	EPA	General	V2-G2	Vol 2	"While the percentage of several of the observations is high, it is important to note that this analyte group...has no impact on site characterization." While this may be a true statement, having high exceedances of QC requirements may show a systemic problem and/bias for a portion or entire set of analytical data. Substantiate this statement with additional information/examples. Additional Specific Comments are provided below.	This will be addressed in the specific comments below.
	EPA	General	V2-G3	Vol 2	V2 G3. ATTACHMENT 3 – Data Adequacy Report (DAR), Groundwater and Surface Water Data Adequacy: The document indicates that groundwater data are adequate and are used to evaluate the groundwater-to-surface water exposure pathway (page 50). It is also indicated that groundwater data have been evaluated to delineate contaminant plumes and used to assess the potential for impacts to surface water. However, the DAR only discusses data from seeps in order to assess the potential for human health risks (i.e., seep data are compared to PRGs). As stated in previous comments (comments on June 2005 Pre-Draft Data Adequacy Report), it is not clear why the approach includes an evaluation of seep data to surface water human health PRGs, but there is no mention of any comparisons to surface water seeps to ESLs. In general, it is agreed that comparison of seep water to ESLs is not necessary for seeps that do not discharge directly to surface water. However, the DAR Surface Water Data Adequacy (Section 2.8) does not clearly evaluate the approach for addressing the potential for ecological exposures to contaminated seep water or groundwater discharging to surface water. Please revise the DAR to discuss:	In the calculation of Exposure Point Concentrations (EPCs) for surface water, no distinction is made between in-stream surface water and seep surface water, i.e., the EPC is based on all surface water data for the EU or AEU. Therefore, exposure of ecological receptors to contaminated seep water has been addressed in the risk assessment. The DAR also does not differentiate in-stream and seep surface water. All surface water data are compared to PRGs (Figures A3.25 through A3.32). As stated in Section 2.8, the monitoring programs at RFETS were designed to protect human health and the environment, and have produced data that are adequate for determining the nature and extent of contamination and the establishment of ambient surface water quality pursuant to WQCD policy. No changes will be made.
	EPA	General	V2-G3	Vol 2	Aquatic Receptors. The primary concern for aquatic receptors would be the impact of seeps on surface water. The objective of the DAR for this matter should be to discuss whether available surface water and sediment data represent areas where groundwater may discharge to surface water, and how the surface water data set takes into account the potential influences from seep areas.	Because the EPCs for surface water are based on an aggregation of both in-stream and seep surface water quality data, there seems to be little value in focusing on the adequacy of seep data per se, or the fraction of total exposure by the PMJM and non-PMJM receptors to seep water contaminants. No changes will be made.
	EPA	General	V2-G3	Vol 2	Wildlife Receptors, Non-PMJM. The DAR should be revised to indicate that although wildlife receptors may occasionally drink from seeps, given the other on-site surface water sources (e.g., creeks, ditches, ponds), it is highly unlikely that a substantial fraction of the total water intake would be derived solely from seeps. In addition, water-based ESLs for wildlife are not provided in the CRA Methodology due to the expectation that wildlife exposures from ingestion of water are likely to be negligible relative to ingestion of dietary items and incidental ingestion of soil.	See response to the comment above.
	EPA	General	V2-G3	Vol 2	Wildlife Receptors, PMJM. The DAR should present a figure which presents both the location of seeps co-located with PMJM habitat to illustrate that samples are either not needed or that samples are available in PMJM habitats that are at or are downgradient of the seeps.	See response to the comment above
	EPA	General	V2-G3	Vol 2	The evaluation of groundwater-to-surface water migration pathway should also be added to the aquatic exposure unit (AEU) assessments in Volume 15B.	The EPCs for surface water are based on an aggregation of both in-stream and seep surface water quality data. Therefore, groundwater discharging at the surface is evaluated for the AEU's. No changes will be made.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	General	V2-G4	Vol 2	V2 G4. ATTACHMENT 3, Temporal Representativeness: For several ECOIs, the temporal representativeness sections make statements to the effect that, because an ECOI was infrequently detected, or not detected within a particular EU/AEU or PMJM habitat patch, the ECOI is assumed not be present. This is only appropriate if the detection limits achieved were adequate to assess potential risks to the receptors. For example, on Page 37, in Section 2.5.2 (South Walnut Creek AEU), the second paragraph indicates that PCBs were rarely detected in surface water. However, Volume 15B2, Attachment 1, Table A.1.2.SWAEU.1, indicates that the detection limit was not low enough to be able to evaluate the ESL. The issue related to the lack of adequate detection limits is also identified for Volumes 3 through 14 (See General Comment EU G.23 for those volumes). Please review discussions related to non-detected ECOIs and revise the text to indicate the limitation associated with detection limits as appropriate. For PCBs, it is agreed that in most scenarios, the low solubility of the compound make it unlikely for the chemical to be in water especially if co-located sediment concentrations are not significantly elevated. The text related to PCBs in surface water should be revised to indicate that current surface water samples for PCBs are not warranted unless sediment concentrations are elevated in the stream, which is evaluated in Volume 15B.	The adequacy of detection limits relative to PRGs and ESLs is evaluated in Attachment 1 to Volumes 3 through 15. Attachment 3 of Volume 2 will be revised to summarize the evaluation process and overall conclusions. Any analyte group-specific detection limit issues related to EU and AEU data adequacy will be noted in Attachment 1.
	EPA	General	V2-G5	Vol 2	V2 G5. ATTACHMENT 4 – Insignificant Pathways. The attachment was intended to justify why these exposure pathways are considered complete, but insignificant in the human health site conceptual model. The explanation for ingestion of deer meat is appropriate. However, the justification for all other pathways is not supported. The attachment compares the contaminant concentrations found in surface water, groundwater seeps and vapor intrusion to PRGs in an attempt to show why these pathways are insignificant. There are a number of exceedances of the PRGs for each of these pathways. However, the more the authors tried to explain why these exceedances were not of concern, the more it appeared that the pathways should be evaluated. It is recommended that these pathways be evaluated similar to the deer ingestion pathway, via a mini-risk assessment. After reading the write-up on the deer ingestion pathway, I saw an exposure estimate was done and the calculated risk estimates were below EPA's levels of health concern. Thus, it is supported that this pathway is, indeed, insignificant.  Let's take the surface water and seep pathways for example. Comparing the maximum values to the PRGs was a good first step. Because there are exceedances, we should go to the next step. Aggregate the data (for those COCs which exceeded the PRGs) to be representative of exposure to the wildlife worker or visitor. That is, calculate the 95% upper confidence limit on the mean for the data set which includes both the surface water and seep data for that EU. Estimate exposure and risk and present the results. If the risk estimates are below EPA's levels of concern, this can be used to support that the pathways are insignificant. If not, we have no choice but to revise the site conceptual model and include exposure to surface water as a significant pathway of exposure. The vapor intrusion pathway is more complicated, but something along the same lines should be done. It would be beneficial to meet with DOE to discuss these issues and develop an acceptable approach for evaluating these exposure pathways and determine if the outcome will impact the individual EU risk assessments.	Attachment 4 will be revised to include a quantitative risk screening for the surface water and indoor air pathways based on meetings with EPA and CDPHE.
	EPA	General	V2-G6	Vol 2	V2 G6. ATTACHMENT 6 - Tier 2 Methodology. The method presented in Attachment 6 for calculating the UCL and UTL concentrations is not appropriate and does not reflect the approach documented in the CRA Methodology. Section 4.6 of the CRA Methodology states that the "uncertainty around the best estimate... will be estimated using the same method as for Tier 1." The UCL and UTL concentrations are estimated using ProUCL and S-Plus, respectively. However, this attachment states that upper-bound statistics were calculated assuming a normal distribution and deriving the upper-bound estimates using the Student's t-test value (for the UCL) or k value (for the UTL). Tier 2 EPCs should be calculated using the procedure described in the CRA Methodology. Please revise all Tier 2 risk calculations to be in accordance with the approved method.	The Tier 2 UCL and UTL concentrations will be estimated using ProUCL and S-Plus, respectively. Attachment 6 of Volume 2 will be revised to reflect the change in procedure.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	General	V2-G7	Vol 2	V2 G7. ATTACHMENT 8 - Interpretation of Spatial Trends. In the Professional Judgment (Attachment 8), the spatial trends sections continually make statements that, despite the fact that EU concentrations are statistically higher than background, because elevated concentrations are outside the boundaries of an IHSS they are representative of naturally occurring levels. This line of evidence can only be used if it is assumed that all potential areas of contamination have been identified and are encompassed within the existing IHSS boundaries. It is agreed that this may be true in some cases, but it is not evident that this can be asserted as a universal truth.	After 20 years of exhaustive record searches and investigations, it is assumed that all potential sources of contamination have been identified and are encompassed within the existing IHSS boundaries. Furthermore, all of the Buffer Zone Contamination Report (BZCR) sites that were brought to DOE's attention by CDPHE have been dispositioned as not requiring further investigation and approved by CDPHE. No changes will be made to Volume 2, Attachment 8.
	EPA	General	V2-G7	Vol 2	If no spatial gradient is apparent at the level of the EU or the entire site, then it is agreed that any observed levels are more likely to be natural than site-related. However, if a spatial gradient is apparent (i.e., levels are higher in site-impacted areas relative to outlying areas), either at the level of the EU or the entire site, then the fact that elevated levels are outside of an IHSS is irrelevant. In such an instance, the chemical should be retained as a possible ECOPC. Spatial trend is only one line of evidence that contributes to the decision to retain/exclude ECOPCs. For each EU/AEU report, the decision to retain/exclude an ECOPC should take into consideration all relevant lines of evidence.	If PCOC/ECOI levels are higher in historical IHSSs relative to outlying areas in the EU where professional judgment is being applied, then to be conservative, the PCOC/ECOI is considered a COC/ECOPC regardless of other lines of evidence. If PCOC/ECOI levels are higher in historical IHSSs relative to outlying areas in areas downgradient/downwind or sidegradient from the EU where professional judgment is being applied, then this cannot be interpreted as evidence that the PCOC/ECOIs are necessarily COC/ECOPCs at the EU without other lines of evidence. No changes will be made to Volume 2, Attachment 8.
	EPA	General	V2-G7	Vol 2	For example, there are multiple samples collected in the RCEU that appear to have concentrations similar to those in potentially site-impacted areas (e.g., tin). Because these samples are from areas outside of any known IHSS, the Professional Judgment concludes that these elevated concentrations are representative of naturally occurring levels. However, the concentrations are elevated above background and are similar in magnitude to those found in source areas and, while samples are not from within a known IHSS, this spatial pattern should not be ignored. A summary of the conclusions provided for process knowledge and spatial trends is included in the attached Table C2. At a minimum, chemicals that are: 1) an expected contaminant at RFETS; 2) for which there is a strong spatial trend (i.e., figures provided indicate levels are higher in site-impacted areas relative to outlying areas); and 3) an expected contaminant and is specifically identified for the EU, should be retained as ECOPCs for that EU.	See response to EPA General comment number G7 to Volume 2 above.
	EPA	General	V2-G7	Vol 2	The two attached tables summarize the conclusions for each ECOIs discussed in the Professional Judgment (Table C3- Non-PMJM, Table C4- PMJM.). Red text indicates instances where, based on the information currently presented, it is not agreed that the conclusion for the ECOI for an EU is supported. The attached Table C2 indicates where additional information may be provided for certain ECOIs and EUs. A meeting to discuss these ECOIs should be scheduled.	No ECOPCs will be added for non-PMJM receptors based on an agency meeting held on 4/12/06. Based on EPA, CDPHE, and USFWS comments, manganese and tin will be added as ECOPCs for PMJM in the RCEU. It was also suggested that tin be added as an ECOPC for PMJM in the LWOEU. However, tin is an ECOPC for PMJM in the LWOEU. It appears the suggestion was made because of an error in Section 3.1.7 of Attachment 8, which indicated tin is not an ECOPC. The error will be corrected.
	EPA	General	V2-G7	Vol 2	Specific examples of other errors and inconsistencies in the Professional Judgment attachment with regard to the spatial trends conclusions are presented in the Specific Comments (see Attachment 8 comment section).	See responses to EPA specific comments, for Volume 2, Attachment 8.
	CDPHE	General	1	Vol 2	1. Data Description The text in Section 2.1 states that there are approximately 2 million data records for use in the CRA. It is, however, important to explain the availability of data for the CRA on the EU- and AEU-specific basis. In addition, it is misleading to state that the data adequacy report (DAR) concludes that the data are considered adequate for the purposes of the CRA. This statement should be revised to clarify that the existing data do not always meet the data adequacy guidelines; however, it is possible to make risk management decisions based on other lines of evidence.	The last paragraph of Section 2.1 addresses the EU- and AEU-specific data adequacy issue. The last paragraph of Section 2.1 will be modified as suggested. Furthermore, Section 2.1 will be expanded to discuss the types of data used in the CRA, and to reference Attachment 2 of Volume 2 for the data processing steps performed on the data to arrive at "CRA ready" data. Because the process used to arrive at "CRA ready" data was used for the RI (i.e., the same data are used for the RI and CRA, with a few exceptions [which will be highlighted]), the term will be changed to "RI ready".

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	CDPHE	General	2	Vol 2	2. Insignificant Exposure Pathways for the Human Health Risk Assessment It is important to perform a screening-level risk assessment to demonstrate insignificance of certain complete exposure pathways (e.g., ingestion of surface water, inhalation of volatiles from subsurface soil and groundwater). The approach of exceedance frequency, based on direct comparison with PRGs, currently used in Attachment 4 inadequately evaluates the significance of exposure pathway(s). For example, the cumulative risk of carcinogenic chemicals is not taken into account. Please revise the risk assessment by conducting a mini screening-level assessment as per discussions of the 7th November meeting.	Attachment 4 will be revised to include a quantitative risk screening for the surface water and indoor air pathways based on meetings with EPA and CDPHE.
	CDPHE	General	3	Vol 2	3. Incomplete Exposure Pathways for the Human Health Risk Assessment Ingestion of fish is considered an incomplete pathway for the WRV based on the assumption that fishing is not included in any of the proposed alternatives and, therefore, is not part of the comprehensive plan for the wildlife refuge. It would be useful to provide citation for the comprehensive plan for the wildlife refuge that prohibits fishing.	The Final Comprehensive Conservation Plan and Environmental Impact Statement for Rocky Flats National Wildlife Refuge (USFWS 2004) presents proposed programs for the various alternatives. Proposed programs include the following: organized guided tours, hiking, biking, limited equestrian trails, and an organized youth/disabled hunting program. Fishing is not included in the list of proposed programs for any of the alternatives. A reference for the Plan is already provided on page 8 of Volume 2. Therefore, no changes will be made to Volume 2, Section 2.2.4.
	CDPHE	General	4	Vol 2	4. Calculation of Tier-2 Exposure Point Concentrations (EPCs) As per discussions of the 7th November meeting, it is our understanding that the calculation of Tier-2 EPCs will be revised using ProUCL and S-Plus statistical methodology.	The Tier 2 calculations will be revised using ProUCL for the UCL calculations and S-Plus for the UTL calculations as discussed at the meeting with EPA and CDPHE on November 7, 2005. Attachment 6 will be revised to describe the revised procedure for calculations.
	CDPHE	General	5	Vol 2	5. Site Background Data Sets Background data summary Tables A5.1 to A5.6 presented in Attachment 5 do not include maximum and minimum concentrations for certain chemicals and are left null for the number of detects and the detection frequency; for example, cesium and molybdenum in Table A5.1. Please provide reasons for not including maximum and minimum concentrations, and how statistics were calculated in a footnote.	The background concentrations for the above noted metals are all non-detects. Attachment 5, Tables A5.1 through A5.6 will be revised for clarification.
	CDPHE	General	6	Vol 2	6. Professional Judgment –Comparison to Regional Background The last sentence of text section that discusses comparison to regional background states, ".....the data set for Colorado and the bordering states may be more representative of these variable soil types." This statement seems to place more emphasis on the data set for Colorado and bordering states than the site-specific background. Please consider revising this statement to reflect that the use of regional background data set may provide perspective on the site-specific background risks.	Section 2.2.5, Professional Judgment, 5th bullet, last sentence will be revised as suggested.
	CDPHE	General	7	Vol 2	7. Non-PMJM Risk Characterization The text in Section 2.3 that discusses risk characterization for non-PMJM receptors should be revised to clarify that alternate TRVs may be considered for the uncertainty analysis. In addition, a discussion of how HQs for aquatic receptors will be interpreted is not included in this section.	Section 2.3.6, will be revised to clarify that LOAEL and threshold TRVs will be used. A paragraph will be added to describe how HQs for aquatic receptors will be interpreted.
	CDPHE	General	8	Vol 2	8. Summary of the OU 3 Risk Assessment (off-site area) This section should provide additional details, for example, by discussing which analytes and receptors (child or adult) were evaluated in the OU 3 risk assessment. For example, which chemicals were included in the selection process for COCs. Additionally, please include a brief summary of the human health and ecological screening evaluation.	In accordance with the CRA Methodology, Section 3 summarizes the findings of the OU3 Baseline Risk Assessment (BRA), and provides a review of water and air quality data collected since the signing of the OU3 CAD/ROD to assess whether environmental conditions may have changed at OU3. The BRA is available in the Administrative Record (AR number OU03-A-000466) for additional details on the risk assessment methodology.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	CDPHE	General	9	Vol 2	9. Exposure Units It is important to provide the basis for selecting the exposure units. Additionally, the relevance of the exposure units to PMJM habitats should be discussed in this section.	Volume 2 is intended to be a summary of the risk assessment methodology. The detailed rationale for defining the EUs is provided in the CRA Methodology. No changes will be made to Section 2.2.3, Exposure Units.
	CDPHE	General	10	Vol 2	10. ECOPC Selection for PMJM Receptor The selection of ECOPCs for the PMJM inappropriately includes a detection frequency screening step. This step should be eliminated.	The step was not used to select ECOPCs for PMJM. The step will be eliminated from the text. (See Section 2.3.3, 4th paragraph.)
	CDPHE	General	11	Vol 2	11. Potential Exposure of Ecological Receptors to Contaminated Groundwater Discharging to Surface Water The DAR does not adequately evaluate the potential exposure of aquatic receptors to contaminated groundwater discharging to surface water. Additionally, it is important to justify that exposure to seep water for non-PMJM and PMJM receptors represents an insignificant exposure pathway.	In the calculation of Exposure Point Concentrations (EPCs) for surface water, no distinction was made between in-stream surface water and seep surface water, i.e., the EPC is based on all surface water data for the EU or AEU. Therefore, exposure of ecological receptors to contaminated groundwater discharging at seeps has been addressed. See revised Section 2.1. No change will be made to the text.
	CDPHE	General		Vol 2	Attachment 2 – Data Quality Assessment CDPHE has not reviewed this attachment at this time.	Comment Noted.
	CDPHE	General	12	Vol 2	Attachment 3 12. Overview of Data Adequacy The discussion pertaining to historical use and the possibility of contaminant migration through wind and hydrologic pathways as lines of evidence is appropriate to qualitatively indicate that organics are not likely to be of significant concern in the buffer zone area. This information, however, is inadequate to provide definitive proof that no release and transport has occurred. Thus, the overall conclusions that the data are adequate for the CRA cannot be supported quantitatively. Therefore, the availability of the limited and/or no data needs should be addressed in the uncertainty discussion of the CRA.	When data do not meet the data adequacy guidelines for an EU or AEU, other lines of evidence have been used to show that risk management decisions can still be rendered. The Data Adequacy sections in Volumes 3 through 15 will be revised to summarize the limitations of the data for each EU and AEU.
	CDPHE	General	13	Vol 2	13. Detection Limits Adequacy The adequacy of detection limits in relation to ESLs should be evaluated. This evaluation would be useful to support conclusions regarding the non-detect concentration of chemicals.	The adequacy of detection limits relative to PRGs and ESLs is evaluated in Attachment 1 to Volumes 3 through 15. In Attachment 3 of Volume 2, a new Section 2.2.2. will be created on detection limit adequacy that will summarize the evaluation process and overall conclusions.
	CDPHE	General	14	Vol 2	14. Section 2.2.- CRA DQO Decision Rule #1 It is important to clarify in this section that data quality objectives (DQO) were historically established based on the potential human health risks and were not designed for assessing risks to ecological receptors.	In accordance with Section 3.1.5 of the CRA Methodology, the data quality decision rules are used to determine the adequacy of the data for both the human health and ecological risk assessment portions of the CRA. No changes will be made to Section 2.1. (Note: DQO Decision Rule #1 is identified in Section 2.1.)
	CDPHE	General	15	Vol 2	15. Section 2.2.1-Data Collection Overview Page 6, 2nd full paragraph – The text does not provide a complete list of reasons that data may not be deemed “CRA ready”.	Attachment 2 of Volume 2 will be revised to include a section on data processing that includes a complete list of reasons data may not be deemed “CRA ready”. Section 2.2.1. includes the reference to Attachment 2. Because the process used to arrive at “CRA ready” data was used for the RI, the term will be changed to “RI ready”.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	CDPHE	General	15	Vol 2	Page 6, 3rd full paragraph – Please clarify if “fine tuning” process also focused on ecological risk assessment.	Ecological risk assessments were performed for OUs 5 and 6, including the preparation of work plans for these risk assessments. The text will be revised to clarify that the “fine tuning” process was applicable to both the human health and ecological risk assessment.
	CDPHE	General	16	Vol 2	16. Section 2.3.- Overview of Contamination and Contaminant Migration Pathways at RFETS – Please note the following comments on this section: (a) The second bullet should be clarified to include that PCBs are detected at locations which are not downgradient of the transformer sites. For example, PCBs are detected in the B-series pond sediments associated with wastewater treatment, which is not necessarily downgradient of the transformer sites. Additionally, the overview should include the types of contaminants that may be present in the landfills.	The ponds were originally constructed to capture storm water runoff and for spill control. Although changes in flow configuration occurred over time, collection of runoff from upgradient transformer sites cannot be ruled out in any of the ponds. In Section 2.3, 1st paragraph, the first bullet will be modified to indicate the historical IHSSs include landfills.
	CDPHE	General	16	Vol 2	(b) The limited data are available for dioxins. Therefore, additional documentation is needed to support the lack of need for assessing the data adequacy related to dioxins. For example, it is important to demonstrate that how the existing locations are representative of potential windblown contamination from historical incineration operations.	In Section 2.3, 5th paragraph, the discussion on the adequacy of the dioxin data will be revised to more clearly discuss the potential sources of dioxins and the biased sampling and analysis that has been performed that rule out dioxins as a wide-spread contaminant at RFETS.
	CDPHE	General	16	Vol 2	(c) It is stated, “ with the exception of one dioxin surface sample location, herbicides and dioxin concentrations are not above the ESLs in surface soil....., or the PRGs in surface soil/surface sediment.....”. This statement appears to be inconsistent with the evaluation presented in the Upper Woman EU where dioxins are carried through the risk characterization step for the human health and ecological risk assessments. Additionally, dioxins seen to be of concern for some AEUs as well.	The statement is in error and will be corrected. The discussion on dioxins will be revised as noted above. (See Section 2.3, 5th paragraph.)
	CDPHE	General	17	Vol 2	West Area EU 17. Section 2.4.1- Number of Samples - There are no surface soil/surface sediment data for organics. This data limitation is inadequately addressed to support the conclusions that no additional samples are needed to make risk decisions. For example, no comparisons with ESLs are included. Finally, it is important to acknowledge this data limitation in the uncertainty analysis.	The sediment data comparisons to ESLs are provided in the Rock Creek AEU (Section 2.5.5) and McKay Ditch AEU (Section 2.5.6) data adequacy assessments. The Data Adequacy sections of each risk assessment in Volumes 3 through 15 will be revised to summarize the data limitations for the West Area EU and the other EUs and AEUs. No changes will be made to Volume 2, Attachment 3.
	CDPHE	General	18	Vol 2	Lower Walnut drainage EU 18. Section 2.4.2-Surface Soil – PCB samples are limited in this EU and no samples are available from PMJM habitat areas.	This is acknowledged in the text, and rationale is provided to demonstrate that risk management decisions can be made with this data limitation. Therefore, no changes will be made to the text in Section 2.4.3. (The reference to Section 2.4.2 is incorrect.)
	CDPHE	General	19	Vol 2	Attachment 4 - Evaluation of Insignificant Pathways 19. Please see the above noted General Comment # 2.	Addressed in response to General Comment # 2.
	CDPHE	General	20	Vol 2	Attachment 5 – Background Data Summary Tables 20. Please see the above noted General Comment # 5.	Addressed in response to General Comment # 5.
	CDPHE	General	21	Vol 2	Attachment 6 – Tier 2 Methodology 21. Please see the above noted General Comment # 4.	Addressed in response to General Comment # 4.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	CDPHE	General	22	Vol 2	Attachment 7 – Uncertainties Associated with the Ecological Risk Assessment 22. Section 1.1 – Uncertainties associated with data Quality and Adequacy – This section concludes that the data are considered adequate for the purposes of the CRA. This statement does not reflect the magnitude and direction of the uncertainties associated with the availability of limited data, especially, for organics. Please revise this section.	Attachment 7, Section 1.1, 2nd paragraph, the text will be revised as suggested.
	CDPHE	General	23	Vol 2	23. Section 1.2 – Uncertainties Associated with the Ecological Contaminants of Potential Concern Identification Process - The ECOPC identification process was generally too quick to eliminate chemicals to be carried forward into the risk characterization step. Therefore, it is inappropriate to conclude that potential risks for site related chemicals may be overestimated to a limited degree. It would be more appropriate to acknowledge potential underestimation.	As stated in the text, ECOPCs were retained even if a specific source within the EU was not identified but exceedances were located near historical IHSSs. Therefore, it is unlikely that site-related risks are underestimated. No changes will be made to the text in Attachment 7, Section 1.2.
	CDPHE	General	24	Vol 2	24. Section 1.7 – Uncertainties Associated with Eliminating Ecological Contaminants of interest based on professional Judgment – It is not appropriate to conclude that the professional judgment evaluation has little effect on the overall risk calculations. In general, this step tends to underestimate potential risks.	If applicable, in each of the EU volumes (3 through 15), the section on the uncertainties associated with eliminating ecological contaminants of interest based on professional judgment will be revised to include other lines of evidence including comparisons to background and risk potential. No changes will be made to the text in Attachment 7, Section 1.7.
	CDPHE	General	25	Vol 2	25. Section 2.0 – Summary of Significant Sources of Uncertainty – It is not appropriate to state, “uncertain but somewhat conservative nature of the risk estimation should be taken into consideration when reviewing the conclusions of the risk assessment during the risk management process.” This statement should be revised to reflect the overall uncertain nature of risk calculations, and it is important for risk managers and the public to keep this in mind when interpreting the results of a risk assessment.	Attachment 7, Section 2.0, 1st paragraph, 3rd sentence, the words “but somewhat conservative” will be deleted from the text.
	CDPHE	General	26	Vol 2	Attachment 8 - Site-Wide professional Judgment Evaluation for Metals 26. Section 3.0 Spatial Trend Evaluation – Overall it is premature to select ECOPCs in this section because several lines of evidence are taken into consideration for the selection of ECOPC. This issue should be addressed on the EU-specific basis. Please refer to the EU-specific comments on the selection of ECOPCs for the risk characterization step. In general, as noted in our previous comments on the pre-draft EU documents, there does appear to be a pattern for exceedances of background concentrations and/or exceedances of the ESLs with concentrations greater than the ESLs primarily focused in the Industrial Area as well as other IHSS/PAC areas.	As stated in the text, if the spatial trend evaluation indicates clustering of elevated metal concentrations near historical IHSSs in the EU under consideration, this line of evidence is significant enough for the metal to be considered a COC/ECOPC regardless of process knowledge or other lines of evidence. Although this could be considered “premature”, this approach was intended to be conservative. Therefore, no changes will be made to the text in Attachment 8, Section 3.0.
	CDPHE	General	27	Vol 2	Attachment 9 – Background Risk Characterization 27. Section 4.1 – Background Ecological Risk Summary – It is inappropriate to conclude that the background risk characterization suggests that the models used to estimate risks are conservative and risk managers should take these factors into consideration when making risk management decisions. This section should be revised to include that elevated background risks also suggest that the background area is influenced by non-site related sources.	We are not aware of any activity at RFETS or off-site background locations that would cause nonsite-related contamination. Background risks are included for comparison purposes, and statements about the conservative nature of ESLs based on background levels will be deleted. Therefore, no changes will be made to the text in Attachment 9, Section 4.1.
	EPA	Specific	S2.1	of 2	Specific Comments Main Text S2.1. Page 2, Section 2.1, Data Description, last paragraph: The last sentence states, “The DAR concludes that data are considered adequate for the purposes of the CRA.” While it is generally agreed that data are adequate for performing a risk assessment, there are some EUs or AEUs where data for some analyte groups are either not available or are very limited preventing the ability to calculate the 95% UCL for use in the risk assessment. Please insert the following sentence prior to the last sentence, “Areas where data are considered lacking or limited are discussed in the individual EUs/AEUs and are denoted in the Uncertainty Section of each report. In general, ...”.	Section 2.1, last paragraph, the last sentence will be modified as follows “The DAR concludes that the data either meet the data adequacy guidelines for each EU/AEU, or in the event of data limitations, risk management decisions can be rendered based on other lines of evidence.” Furthermore, Section 2.1 will be expanded to discuss the types of data used in the CRA, and to reference Attachment 2 of Volume 2 for the data quality screen performed on the data to arrive at “CRA ready” data. Because the process used to arrive at “CRA ready” data was used for the RI (i.e., the same data are used for the RI and CRA, with a few exceptions [which will be highlighted]), the term will be changed to “RI ready”.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.2	Vol 2	S2.2. Page 2, Section 2.2.2, Receptors: It is not clear why the overview of the human health risk assessment includes ecological receptors. Since this is the human health overview, it is recommended that the section be revised to exclude information on ecological receptors.	The text will be revised to exclude information on ecological receptors.
	EPA	Specific	S2.3	Vol 2	S2.3. Pages 3 and 15, Sections 2.2.3 and 2.3.2, Exposure Units: Neither of the human health or ecological risk sections provides a description or rationale for the formation of the Exposure Units for use in the risk assessment. Please expand this section to describe why the exposure units approach was used and the rationale for the location and size of the units. In addition, the ecological exposure unit section should provide additional discussion for the designation of the aquatic exposure units.	Volume 2 is intended to be a summary of the risk assessment methodology. The detailed rationale for defining the EUs and AEUs is provided in the CRA Methodology. No revisions will be made to Sections 2.2.3 and 2.3.2.
	EPA	Specific	S2.4	Vol 2	S2.4. Pages 13-24, Section 2.3, Overview of the Ecological Risk Assessment Methodology: The section does not provide the same types of information or the same content of information as is presented in the human health overview (Section 2.2). For example, future land use, rationale for selection of specific receptors, radiation dose, and background comparison testing, etc., are discussed in Section 2.2, but not in this section. In addition, the several key elements related to exposure assumptions are not discussed. In general, the section should be revised to present sub-sections and content consistent with the human health overview section. If possible, sections that are common to both human and ecological risk assessments, i.e., future land use, exposure units, the site conceptual model, background, and other mutual sections could be presented prior to separating into the two different risk assessment overviews. Several of the specific comments provided below indicate sections that are either lacking or do not present enough information for understanding the ecological risk assessment methodology.	It is agreed that there are subsections within Section 2.2.2 that apply to both the human health and ecological risk assessments, and the section could be rewritten to provide a more organized approach to presentation of the information. However, the current version of the text is accurate and therefore, no changes will be made to Section 2.2.2.
	EPA	Specific	S2.5	Vol 2	S2.5. Page 13, Section 2.3.1, Site Conceptual Model (SCM): The section is difficult to follow since assessment and measurement endpoints are presented between other paragraphs that describe receptors and exposure pathways. It is recognized that the paragraph is inserted in this section in an attempt to first describe the assessment and measurement endpoints concept, and then use it in the discussion of Receptors of Concern. However, the explanation may be clearer if it were presented in sequential order, according to the SCM. The following re-organization should be considered: SCM, Complete Exposure Pathways, Receptors of Concern, Risk Assessment Endpoints.	Although the section could be reorganized as suggested, the section as written is accurate, and therefore, no changes will be made to Section 2.3.1.
	EPA	Specific	S2.6	Vol 2	S2.6. Page 15, Section 2.3.1, Receptors of Concern: The section is too general and does not provide enough rationale for why the selected receptors are appropriate. It should be clarified that there have been extensive ecological surveys conducted at the site and there is a comprehensive list of all species that occur at the site, and attach the comprehensive table of the species identified at the site. Please indicate the different functional groups and habitat types, and how the selected species in Table 2.3 represent the larger functional groups, and indicate that the selection of the receptor groups is to ensure that most exposed groups are evaluated. Also see Volume 3-14, Comment EU G5. The comment provides a recommended table that could be used as a reference for this section.	Volume 2 is intended to be a summary of the risk assessment methodology. The detailed rationale for selection of receptors is provided in the CRA Methodology. No changes will be made to Section 2.3.1.
	EPA	Specific	S2.7	Vol 2	S2.7. Page 15, Section 2.3.1, Complete Exposure Pathways: The section indicates that there are significant and insignificant pathways, but then only presents a discussion related to the insignificant pathways. It is not clear what exposure assumptions are used to evaluate the receptors presented on Table 2.3. Please revise the section to first present a discussion of the significant exposure pathways, similar in content to the exposure pathway discussion as presented in the human health overview (Section 2.2.4).	Section 2.3.1, Complete Exposure Pathways, the text will be revised to note that the exposure assumptions for the receptors are presented in the ecological risk assessments (Volumes 3 through 15).

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.8	Vol 2	S2.8. Page 16, Section 2.3.3, PMJM ECOPC Selection, first bullet: The PMJM ECOPC selection process does not include a detection frequency step. This bullet should be deleted.	Section 2.3.4, last paragraph, the first bullet will be deleted.
	EPA	Specific	S2.9	Vol 2	S2.9. Page 16, Section 2.3.4, Exposure Assessment: The text does not introduce the overall concept for the evaluating exposure prior to discussing the ECOPC process. Considered adding the first sentence from Section 2.3.5, Toxicity Assessment, which appropriately states the overall approach for exposure assessment.	Section 2.3.4, the first paragraph will be modified as suggested.
	EPA	Specific	S2.10	Vol 2	S2.10. Page 19, Section 2.3.4, Receptor-Specific Exposure Parameters: The information presented in the Exposure Assessment Section (Section 2.3.4) describes the different receptors groups and assumptions for each. For continuity, it is recommended that this subsection be moved immediately following that discussion (i.e., before discussion of Exposure Point Concentrations).	Section 2.3.4, The text will be modified as suggested.
	EPA	Specific	S2.11	Vol 2	S2.11. Page 18, Section 2.3.4, Exposure Point Concentrations: While the description is not incorrect, it only presents a minimal discussion as to why there are two different approaches for calculating EPCs. It is recommended that the text be expanded to include a discussion similar to: For large home range receptors, variability in exposure is primarily due to differences in behavior between individuals. Therefore, soil intake rates were set to high-end values to approximate a reasonable but maximum exposure scenario, with EPCs based on the mean. For small home range receptors, variability in exposure is primarily due to differences in the concentration level encountered in the environment. Therefore, the EPC was set to a high-end value (90th percentile) to approximate the reasonable maximum exposure scenario, and intake rates are based on typical average estimates.	Section 2.3.4, Exposure Point Concentrations, the 1st paragraph will be modified as suggested.
	EPA	Specific	S2.12	Vol 2	S2.12. Page 19, Section 2.3.4, Receptor-Specific Exposure Parameters, first paragraph, last sentence: Change "...are not applicable to aquatic receptors since..." to "...are not applicable to aquatic receptors or terrestrial plants and invertebrates since..."	Section 2.3.4, the text will be modified as suggested.
	EPA	Specific	S2.13	Vol 2	S2.13. Page 19, Section 2.3.4, Receptor-Specific Exposure Parameters, first paragraph, 2nd to last sentence: Change "...as part of the aquatic risk assessment..." to "...as part of the aquatic or terrestrial plants/invertebrates risk assessment..."	Section 2.3.4, the text will be modified as suggested.
	EPA	Specific	S2.14	Vol 2	S2.14. Page 20, Section 2.3.5, Toxicity Assessment, last paragraph: The text states that alternative toxicity values (ATs) for surface water are "used as LOAEL equivalent values for aquatic receptors". Surface water ESLs and ATs are more appropriately representative of chronic and acute National Ambient Water Quality Criteria (NAWQC), respectively. These values should not be thought of as representing NOAEL and LOAEL equivalents for aquatic receptors. Change "...presented in Appendix A, Volume 15B of the RI/FS Report for use as LOAEL equivalent values for aquatic receptors." to "...presented in Appendix A, Volume 15B of the RI/FS Report."	Section 2.3.5, Toxicity Assessment, last paragraph, last sentence, "for use as LOAEL equivalent values for aquatic receptors" will be deleted.
	EPA	Specific	S2.15	Vol 2	S2.15. Page 20, Section 2.3.6, Risk Characterization: As written, the HQ interpretation portion of the risk characterization approach is based only on terrestrial receptors. This section should be revised include a discussion of how HQs are interpreted for aquatic receptors.	Section 2.3.6 will be include a discussion of HQ interpretation for aquatic receptors.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.16	Vol 2	S2.16. Page 25, Section 3.0, Summary of OU3 Risk Assessment: It is stated that data indicate conditions do not exist to alter the conclusions of the earlier OU3 assessment, therefore OU3 has not been re-assessed. It is indicated that the results of the OU3 ecological risk assessment which was conducted using the "CDPHE Conservative Screen". There is no citation for this screening method and it is not clear which ecological receptors were evaluated, which exposure pathways were included, which chemicals were measured (it appears that only radionuclides were evaluated), or which toxicity benchmarks were used. Please provide this additional information in the summary.	In accordance with the CRA Methodology, Section 3 summarizes the findings of the OU3 Baseline Risk Assessment (BRA), and provides a review of water and air quality data collected since the signing of the OU3 CAD/ROD to assess whether environmental conditions may have changed at OU3. The BRA is available in the Administrative Record (AR number OU03-A-000466) for additional details on the risk assessment methodology. No changes will be made to Section 3.0.
	EPA	Specific	S2.16	Vol 2	However, based on the summary, it appears that the OU3 risk assessment only evaluated radionuclides. If this is correct, it is recommended that the determination as to whether additional chemicals need to be assessed for OU3 risk assessment be based on whether risks are identified for non-radionuclide chemicals based on the results of the EUs that may be associated with offsite discharges. Volume 2 should be revised to indicate that it cannot be determined whether there are data gaps associated with OU3 ecological risk assessment until the completion of Volume 15.	The OU3 risk assessment examined both radiological and non-radiological constituents. Only the radiological constituents were determined to be COCs for both the human health and ecological risk assessments. Therefore, no further assessment is required for OU3, and no changes will be made to Section 3.0.
	EPA	Specific	S2.17	Vol 2	S2.17. Table 2.2: The table is difficult to understand. First, please identify all acronyms used in the table and footnotes. It is recommended that "EU Data Set" and the "EU EPC Requirement" columns be divided in half (vertically) to reflect when it is applicable to Human Health vs Ecological. Please move the 'b' footnote designation to follow "Background Data Setb" which will help clarify that the background sets presented are also discussed in Section 2.2.5.	The table is sufficiently clear without dividing the "EU Data Set" and the "EU EPC Requirement" columns. Table 2.2, the "b" footnote will be moved as suggested.
	EPA	Specific	S2.18	Vol 2	S2.18. Table 2.3: The notation "(sediment exposure)" makes it appear that the only exposures evaluated for "Aquatic Life" were sediment exposures, yet the aquatic risk assessment evaluated potential risks from direct contact with surface water and sediment. Remove "(sediment exposure)" from the description of representative species for aquatic life.	Table 2.3 will be revised as suggested.
	EPA	Specific	S2.19	Vol 2	S2.19. Table 2.4: The table is identified in the Receptors of Concern section and the text references it as the Assessment Endpoints. Please revise the title to: "Ecological Receptors of Concern".	The text and Table 2.3 title will be revised as suggested (comment addresses Table 2.5, not 2.4).
	EPA	Specific	S2.20	Vol 2	S2.20. Table 2.5: Please add a footnote that references Figure 2.8. Also, please identify the PMJM acronym.	Table 2.5 will be revised as suggested.
	EPA	Specific		Vol 2	ATTACHMENT 1 – RESERVED No comments.	Comment Noted.
	EPA	Specific	S2.21	Vol 2	ATTACHMENT 2 – Data Quality Assessment S2.21. Page ES-1, Executive Summary, second paragraph. The executive summary should provide a clear picture of the available data present before V&V and the resulting data following V&V. For example, present the total number of data points evaluated, the number and percentage of the data points that were rejected, and general conclusions regarding the data set. This information should build from a section in the text that is not currently fully explicit about the review process (refer to comment about Section 2). In addition, a brief but informative discussion on why data were not usable must be included. The last sentence states, "Based on this DQA, the data are of sufficient quality for use in the CRA." This statement is extremely vague and does not provide sufficient detail either in the executive summary or the body of the document to allow for independent confirmation of that statement by the reader. Expand this area.	Based on discussions with the regulatory agencies, the executive summary will be deleted from Attachment 2.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.22	Vol 2	S2.22. Page ES-1, Executive Summary, third paragraph, first sentence. This sentence references data quality objectives (DQOs) that were presented in the Final CRA Work Plan and Methodology. Do these DQOs differ from the DQOs that were presented in the IABZSAP? If so, provide a summary of the DQOs here and explain the purpose for two different sets of DQOs. If not, please make reference to the IABZSAP in this paragraph.	The DQA is based on the DQOs that are defined in Sections 3 through 5 of the RI and in the CRA Methodology. The DQOs that drive the individual SAPs that comprise these data are the DQOs that these data have been evaluated against during the V&V performed at the time of sample collection.
	EPA	Specific	S2.23	Vol 2	S2.23. Page ES-1, Executive Summary, third paragraph, second sentence. This sentence states, "A review of the most common observations found in the V&V data determined that a minimal amount, less than 1 percent, of the non-V&V data may have been qualified if a review had been performed." Please provide here a summary (and full detail within the body of the text) the additional detail that substantiates this statement. Information should include a description of the review procedures used; an accounting of the number of data points that were subjected to V&V and the number that were non-V&V; the process for extrapolating the predicted fraction of qualified non-V&V, and the calculations for arriving at the value of 1 percent. Additionally, this review process must explain how similar or dissimilar the V&V and non-V&V data are. While the additional detail might alter judgment, this reviewer finds the prospect of trying to predict any outcome of non-V&V extremely dubious and would encourage a completely alternate approach. That is, the DQA should never attempt to predict what portion of data would require qualification, rejection, or manipulation (e.g., for transcription errors), but rather state the obvious: the non-V&V data were not evaluated to the extent of the V&V data and indicate any impacts to the data set because of it. After all, providing that the frequency of V&V data meets the project-required frequency, this is not necessarily a limitation to the data set.	Based on the agreement that this DQA is not intended to identify any data for re-qualification, discussions regarding non-V&V data will be deleted from the text.
	EPA	Specific	S2.24	Vol 2	S2.24. Page 1, Section 1.0, second bullet, second sub-bullet. This bullet states, "Surrogate recoveries, MSs, and sample preparation (sample-specific accuracy)." Please provide additional detail as to what is meant by "sample preparation" in the context of accuracy.	Sample preparation can impact sample accuracy when activities such as preservation, storage temperature, lack of sufficient volume for accurate weight or measure, improper sample aliquoting techniques, improper container types or similar sample-specific influences have either a definite or implied effect on the overall confidence of the data point. Additional detail will be provided in the text.
	EPA	Specific	S2.25	Vol 2	S2.25. Page 1, Section 1.0, third bullet, fourth sub-bullet (page 2). This bullet identifies "documentation issues" as being reviewed (or verified) for data representativeness. Please change the bullet to reflect what documentation was reviewed, which may include sample login information, sample prep logs, analytical logs, chains-of custody, etc.	The text will be updated to add more information regarding the documentation reviewed.
	EPA	Specific	S2.26	Vol 2	S2.26. Page 1, Section 1.0, third bullet, fifth sub-bullet (page 2). This bullet identifies "contract noncompliance issues" as being reviewed (or verified) for data representativeness. This statement should reflect that "contract noncompliance reports" were reviewed, instead of issues.	In this context the contractor non-compliance refers to recorded validator observations in the database and not contract non-compliance reports. The observations are about specific non-compliance items/issues. No change will be made as a result of this comment.
	EPA	Specific	S2.27	Vol 2	S2.27. Page 1, Section 1.0, third bullet, sixth sub-bullet (page 2). This bullet identifies "laboratory activities affecting ability to properly identify compounds" as being reviewed (or verified) for data representativeness. Please provide more detail for these laboratory activities. At minimum, list them.	Additional detail will be provided.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.28	Vol 2	S2.28. Page 2, Section 1.0, first bullet. According to the IABZSAP, completeness should be expressed as a percentage of valid, acceptable data. Rather than referring to another document, just state the criterion. Include the numerical completeness criterion and the equation to calculate it..	Completeness is a data adequacy criterion and is addressed in the DAR. It refers to the spatial and temporal distribution of the data, and their adequacy for estimating exposure point concentrations (EPCs). The CRA Methodology states that sample results are adequate if at least one sample for metals and radionuclides exists in each 30-acre block across the Site, or if samples were collected to spatially define the distribution of an analyte in an EU. Additional information regarding completeness can be found in the DAR, which can be found in Appendix A, Volume 2, Attachment 3. Previous versions of the DQA that addressed completeness as usable vs non-usable data were revised because a CDPHE comment on an earlier version of this document requested we remove it because the CRA Methodology describes completeness of the dataset solely on a spatial density basis.
	EPA	Specific	S2.29	Vol 2	S2.29. Page 2, Section 1.0, second bullet. This bullet states that comparability was verified through evaluation of various items. Comparability is also evaluated through standard operation procedures (SOPs) that are routinely used in the field and laboratory, sampling and analysis plans (SAPs) and quality assurance project plans (QAPPs), field audits and their results, data verification and validation procedures, database entry and verification procedures, and sensitivities to action levels of the analytical systems. Please include a complete discussion of these items in this section.	Details about these comparability items will be provided.
	EPA	Specific	S2.30	Vol 2	S2.30. Page 2, Section 2.0, first paragraph. Expand Section 2 to explain the review process, the qualification process and the final state of the database as a result of the review process. For simplicity, a table should be added to show total data points prior to and following V&V, list the number of samples V&Vd parsed by analyte group and sample matrix. Also, separately list the number of samples by analyte group and sample matrix that were qualified as rejected and estimated. You may uncover other items of interest to list here that would further explain the review process and its outcome. Finally, an expanded section (perhaps in the conclusions) should describe whether any data were further qualified as a result of the DQA. (It is very plausible, even expected that this should be so). The table should include another column of info about how the database was altered as a result of qualifications assigned following DQA. A partial example of some info to add/alter to Table A2.6 is shown in Table C5:	Greater explanation of the review and qualification process will be provided. A Data Storage Processing section has been added as Section 2 and describes the final state of the database. The reviewer request to either expand Table A2.1 or create a new table can be done. We respectfully disagree with the reviewer's suggestion that the data should be further qualified based on information that may be uncovered. See the response to General Comment V2.G2 - Holistic and after the fact data validation may add more uncertainty in the overall site characterization.
	EPA	Specific	S2.30	Vol 2	Page 2, Section 2.0, first paragraph, last sentence. This sentence states, "Assuming that the percentage of data qualified as a result of these issues are representative of similar observations in the non-V&V data, less than one percent of the sitewide data set is at risk for such un-acknowledged and therefore un-corrected errors." Please provide rationale, justification, process, and procedures for this statement. (Refer also to comment #3 above.)	This discussion will be deleted.
	EPA	Specific	S2.31	Vol 2	S2.31. Page 3, Section 2.0, last paragraph. Please provide a discussion of the reasons why data were rejected.	As described in the new text, reasons for data rejection cannot be provided from the database. Multiple validation reason codes are often applied to each record. As data users, it is not appropriate for us to say which reason code or combination of reason codes determined the final validation flag applied.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.32	Vol 2	S2.32. Page 4, Section 2.0, first paragraph. This section discusses issues associated with sample duplicates and their impact on field precision. Given the large volumes of data that were collected, it would be helpful to illustrate sample RPDs and DERS on a figure or series of figures. The figure(s) (e.g., maps) should illustrate all field duplicate locations by placing them onto a map of the site, the total number of field duplicates at each location, and the number that did not meet the minimum requirements. This analysis would be helpful in determining if there are significant soil heterogeneity issues and could help direct additional quality control sample evaluations. This comment refers to several subsections found in Section 3 (e.g., Dioxins and Furans—Soil) and is covered in the General Comments section above.	The impact of field duplicate imprecision is reflected in the application of validation flags and comments that indicate non-compliance with the project document controlling individual sampling campaigns. It does not meet project objectives to use the database to imply modifications to data flagging or data usability after the fact. We think the approach of using the database for data flagging or usability assessments is outside the approved project documents. See response to V2.G2.
	EPA	Specific	S2.33	Vol 2	S2.33. Page 4, Section 3.1, and others in Section 3.0. This section states: "Although 43 percent of the target sample/field duplicate analyte pairs exceeded RPD criteria, it is important to note that all exceedances were noted at only five locations. This is more indicative of matrix interference than on overall precision issue." Nearly one half of all duplicate samples did not meet criteria; that is a lot. Without additional supporting information, the accuracy of the quoted statement is unclear. That is, if the conclusion is truly related to matrix interferences, this section must provide data regarding the performance of other QC samples that illuminate matrix interference problems, such as MS or MSD samples. Furthermore, as discussed in the general comments section above, a map or other graphic showing the total number, location, and fraction of duplicates not meeting acceptance criteria should be included to illustrate geospatial relationship of the samples. Finally, consider and present the rationale for application of additional sample qualification to the group of soils measured for dioxins and furans as a result of the large number of duplicates not meeting acceptance criteria.	The value 43% was reported in error. The correct result was ~ 18%. The text has been expanded to discuss this finding. See Response to Comment V2.G2.
	EPA	Specific	S2.34	Vol 2	S2.34. Page 4, Section 3.2 and others in Section 3.0. Please provide a discussion on the procedures for appending V&V qualifiers to the data which are in the database as well as the procedures that were utilized to minimize transcription errors. (Refer also to comment #3 above)	Details regarding such actions will be provided in Section 3.0.
	EPA	Specific	S2.35	Vol 2	S2.35. Page 8, Section 4.0, second paragraph. The numbers in this paragraph do not add correctly. Specifically, the report states that of the 89 percent of data undergoing V&V, 85 percent of that data had no QC issues, 13 percent were qualified as estimated or undetected, and the final 2 percent were qualified, but still acceptable. While that totals 100%, the text goes on to say that less than 3% of the is flagged for lab blank contamination and then states that approximately 2 percent of the data set was rejected during V&V. It is unclear what this really says, but at minimum the total percentage of samples is shown at 102%, which is incorrect. Clarify this section by improving Table A2.6 as shown in comment #10.	The totals presented are correct. The paragraph describes that 90% of the entire dataset underwent V&V. The paragraph further discusses the breakdown of the V&V data, which should total 100%, with 85% no QC issues, 13% estimated or undetected, and 2% other. The text states that less than 3% of the data reported as detected by the laboratory was flagged as a non-detect due to blank contamination. This is accurate. The denominator in this equation is different, and therefore not additive to the 85, 13, and 2% discussions above. The denominator in the percentage of rejected data calculation is also different. Rejected data are not used in the RI/FS, so the denominator in this equation includes all V&V data, whether used in the RI/FS or not. No change has been made as a result of this comment.
	EPA	Specific	S2.36	Vol 2	S2.36. Page 8, Section 4.0, first bullet, last paragraph. This paragraph states that all target sample/field duplicate pairs were found to be acceptable. However, RPDs for dioxins and metals were 43 and 12 percent, respectively. Please include a discussion on these two analytical groups. (Refer to comment #14).	This statement will be modified to reflect the findings referred to in response to Comment S2.33.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.37	Vol 2	S2.37. Page 9, Section 4.0, first bullet, third paragraph. This sentence states, "Accuracy was generally acceptable with infrequent performance outside QC limits." This statement seems inaccurate as over 1/3 of the data exhibited accuracy related issues. As indicated in previous comments above, it is inadequate to state only the frequency of QC sample exceedances. This information must be accompanied by detail about what may be affecting the poor accuracy. It is unacceptable to gloss over poor accuracy results, especially at the rate of 33%. This section must be expanded to specify the conditions about the poor results, including, for example, information about trends in specific matrices or analyte groups. Remember the questions regarding accuracy of QC samples leads us to question accuracy of the investigative field samples. This is no small matter. As such, any conclusions regarding questionable accuracy in field samples must be clearly outlined here.	The statement that accuracy was generally acceptable has been removed. The accuracy specific detail can be found in Table A2.5.
	EPA	Specific	S2.38	Vol 2	S2.38. Page 9, Section 4.0, third bullet. Please include evaluations associated with the additional documents cited in this section.	Please see the response to comment S2.29. No change has been made as a result of this comment.
	EPA	Specific	S2.39	Vol 2	S2.39. Page 10, Section 4.0, last sentence. The statement that concludes Section 4.0: "This review concludes that the PARCC of the data are generally acceptable and the CRA objectives have been met.", cannot be accurate based upon the limited information provided in the DQA. These concluding statements must state, rather, the data qualified as a result of the DQA process. That is, it must call out those data that are impacted from the combination of V&V and the DQA. Finally, given the inherent errors in sampling and analysis and difficulties in acquiring an absolutely pristine data set, a reviewer should be highly skeptical of any data set that is characterized as both "generally acceptable and all objectives have been met." without any further qualification. To aid in a more complete summarization, the report must include a table shows all qualification assignments for each data point for each associated QC sample and should show the resulting qualification as a result of the DQA. The new table should show each condition that would result in qualification for both laboratory QC (e.g., blank, MS, laboratory duplicate, LCS), field QC (e.g., field duplicates) and any overall data quality assignment applied to as a result of the DQA. This may occur when applying a holistic approach to review looking at trends as described above. A recommended template for this table is shown in Table C6.	We respectfully disagree that data flags can or should be applied through this process. Please refer to the response to comment V2.G2. All data and data flagging information are supplied in the attached dataset to the main document. No change has been made as a result of this comment.
	EPA	Specific	S2.40	Vol 2	ATTACHMENT 3 – Data Adequacy Report S2.40. In several of the EU/AEU-specific discussions, the fact that concentrations were non-detect is used to support the conclusion that a chemical class is not likely to be of concern. This conclusion is only true if the detection limits achieved are adequate to assess potential risks. If the detection limits are higher than the ESL, it cannot be assumed that because concentration levels were less than the detection limit that risks are low. The data adequacy section should be revised to include a statement regarding the importance of detection limit adequacy when making decisions based on non-detects. Please review EU/AEU discussions to verify that chemicals without adequate detection limits are identified and revise any statements and conclusions as needed.	The adequacy of detection limits relative to PRGs and ESLs is evaluated in Attachment 1 to Volumes 3 through 15. Attachment 3 of Volume 2 will be revised to summarize the evaluation process and overall conclusions. Any analyte group-specific detection limit issues related to EU and AEU data adequacy will be noted. A new Section 2.2.2, Detection Limit Adequacy, will be created in Attachment 3.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.40	Vol 2	As noted in earlier comments on the pre-draft Data Adequacy Report, it is not appropriate to state words to the effect that "there are no data but no data are adequate because we do not know of any releases". However, as previously agreed, the data adequacy assessment may invoke other data and/or other knowledge to argue why risk management conclusions may be possible even though data are not adequate for quantitative computations. In the event that these arguments are considered persuasive by the Agencies, then the CRA for that Exposure Area is appropriate, despite the data limitations. When there are no data for an EU/AEU but the supporting evidence suggests that risk decisions can be made without additional sampling, please revise the "no data are adequate" conclusion to be similar to the following: "Although the existing data do not meet the minimal data adequacy guidelines, it is possible to make risk decisions without additional sampling."	The suggested language will be incorporated into the text where appropriate.
	EPA	Specific	S2.41	Vol 2	S2.41. Data Adequacy Report, Figures: Please add a footnote to the appropriate figures, or clarify in the text, why acetone and methylene chloride are not included in the VOC figures and why phthalates are not included in the SVOC figures.	Methylene chloride and acetone are common laboratory contaminants that are often present in low concentrations in samples. PAHs are ubiquitous in the environment and thus also are often present in low concentrations in samples. They were broken out for separate assessment so that the portrayal of VOC and SVOC concentrations is more reflective of potential contamination. For clarification, Attachment 3, Section 2.0, the text will be revised accordingly.
	EPA	Specific	S2.42	Vol 2	S2.42. Page 2, Section 2.0, Data Adequacy Assessment. The wrong series of figures are referenced. In the fifth bullet, second set of bullets change, "Figures A3.23 through A3.40" to "Figures A3.33 through A3.40".	Attachment 3, Section 2.0, 4th paragraph, the 5th bullet will be revised as suggested.
	EPA	Specific	S2.43	Vol 2	S2.43. Page 2, Section 2.0, Data Adequacy Assessment, last sentence: The statement should be clarified to indicate groundwater is not evaluated directly, however, the groundwater to surface water migration pathway is evaluated.	Attachment 3, Section 2.0, last paragraph, the last sentence will be revised as suggested.
	EPA	Specific	S2.44	Vol 2	S2.44. Page 6, Section 2.2.1, Data Collection Overview, first paragraph: The text indicates that samples are not at the surface after 'clean backfill' has been placed in the excavation. The text should clarify where backfill was imported from and how it was determined to be 'clean'. For EU-specific data discussions, it will be important to indicate whether an Accelerated Action has occurred in the EU and the approximate depth of the fill material placed over 'surface soil' samples that are used in the risk assessment.	See response to EPA General Comment V2-G1. The procedure (including sampling of backfill material) for backfilling excavations is addressed in the Soil and Asphalt RFCA Standard Operating Protocol (RSOP) and the Environmental Restoration (RSOP), both approved by regulatory agencies.
	EPA	Specific	S2.45	Vol 2	S2.45. Page 8, Section 2.2.3, Refinement of Data Adequacy Guidelines, top of page: Please change, "3 samples have been identified as a data adequacy guideline", to 3 samples have been identified as the minimum data adequacy guideline."	Attachment 3, Section 2.2.3 (new Section 2.2.4), 1st paragraph, 1st bullet will be revised as suggested.
	EPA	Specific	S2.46	Vol 2	S2.46. Page 9, Section 2.3, Overview of Contamination, last bullet: Change, "contamination of surface water" to "contamination of surface water and sediment".	Attachment 3, Section 2.3, 1st paragraph, 4th bullet will be revised as suggested.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.47	Vol 2	S2.47. Page 10, Section 2.3, Overview of Contamination: The conclusion indicates that based on a review of data and historical information, data adequacy related to pesticides, herbicides and dioxins for individual EUs is not discussed further for each EU. In RAWG discussions, the Agencies agreed with the conclusion as it relates to pesticides and herbicides, because it is clearly supported based on the extensive amount of available data for those two analyte groups (as shown in figures A3.6, A3.46, A3.62). However, due to the limited amount of samples and data, the same argument does not apply for dioxin. There is a higher level of uncertainty related to eliminating the need for addressing dioxins, and this uncertainty should be more clearly documented prior to reaching the same conclusion. It is requested that dioxins be removed from the pesticide/herbicide discussion and presented in a separate paragraph. Please revise the discussion to indicate that sample locations were specifically biased to identify if dioxins may be present (e.g., samples of actual ash from incinerators(?), samples are from residual oil in pits(?), sample locations were placed downgradient from IHSSs where dioxin would be expected (e.g., incinerator), and in areas that runoff and deposition would occur). In addition, please revise the statement that samples were collected at other IHSS "although they were not expected", to indicate that several IHSSs in outlying areas, including surface water from the wastewater treatment pond series, were sampled to address uncertainties associated the potential for contamination from historical incineration operations. Figures A.3.8, A.3.32, A.3.38, and A.3.56, should also be referenced to document that dioxins have been sampled and not detected at various locations throughout the site. There has been repeated sampling of dioxins in surface water associated with the former wastewater treatment ponds (i.e., as indicated on Figures A.3.8, A.3.32, A.3.38, and A.3.56). Sampling of surface water and not sediment for a bioaccumulative chemical group is not obvious. It appears there is a data gap associated with sediment and dioxins at the site. Is requested that additional information be provided regarding the limitations of data for this analyte group prior to removing it for further consideration.	Attachment 3, Section 2.3, the text will be revised as suggested.
	EPA	Specific	S2.48	Vol 2	S2.48. Page 11, Section 2.4, Exposure Unit-Specific Data Adequacy Assessment: It is indicated that surface water is likely to be insignificant, is screened against human health PRGs as a conservative measure. It is not evident that the pathway is insignificant. Please revise this paragraph as needed, based on the results of comments for Appendix 4.	Attachment 3, Section 2.4, 2nd paragraph, 2nd sentence, the footnote will be deleted.
	EPA	Specific	S2.49	Vol 2	S2.49. Page 11, Section 2.4.1, West Area EU, Number of Samples: Because there are no surface soil samples for VOCs, SVOCs, or PCBs, this section invokes the use of 5 sediment samples for which concentration of these compounds were either not detected or detected below a level of concern to support the conclusion that no additional samples are needed to make risk decisions. However, this section only includes comparisons to human health PRGs and does not include any comparisons to ESLs. This section should be revised to also include the samples for evaluation of ecological receptors by providing a comparison of results to ESLs.	The comparisons to ESLs are provided in Section 2.5.5 (Rock Creek AEU) and Section 2.5.6 (McKay Ditch AEU). Therefore, no changes will be made to Attachment 3.
	EPA	Specific	S2.50	Vol 2	S2.50. Page 13, Section 2.4.2, Inter Drainage EU: The text indicates that samples were not collected directly from an IHSS where waste oils were sprayed on a roadway and that adjacent samples that are available were not analyzed for PCBs. The footnote states that "there is no documentation that indicates oil contained PCBs". The fact that there is no documentation related to PCBs being in waste oil does not remove the potential for PCBs to be in the waste oil. The text should provide any available information as to the origin or generation of the 'waste oils' that were used on the roads. In addition, if it is determined that no data are needed to characterize this area, this specific data limitation should be included in the Data Description and discussed as an uncertainty in Volume 5 (Inter Drainage EU), and other applicable volumes (e.g., 10, 11, 12, and 13) where roadway spraying occurred and there are no samples.	Attachment 3, Section 2.4.2, Inter Drainage EU, the footnote will be revised as follows: Based on the historical summary presented for PAC 000-501 in the 2005 Annual Update to the Historical Release Report (DOE 2005a), the sources of oil for roadway spraying in the Inter Drainage EU, Upper Woman Drainage EU, and Lower Woman Drainage EU would be one or both of the following: in October 1982, 120 liters of Number 2 diesel fuel from a tank spill on the northern side of Building 371 was used on roads; and in September 1983, 1,200 gallons of Mobil Number 634 gear lubrication oil from a Building 883 rolling mill lube system was used on Plant gravel roads. These oils are not expected to contain PCBs.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.51	Vol 2	S2.51. Page 16, Section 2.4.3, Number of Samples: The text should be revised to indicate any IHSSs that occur in the EU. As noted in previous comments, although there is only one IHSS, the description of the EU fails to mention that LWNEU is downgradient and received discharges from wastewater treatment/sedimentation ponds. Please revise the document to include this important feature and include a statement indicating that PCBs were present in the upgradient WWTP sedimentation ponds. Although the text appears to have been revised to address this comment, however does not mention that the EU receives discharges from the former wastewater treatment/sedimentation ponds (i.e., A and B series ponds). Please revise so that the IHSSs and upgradient sources are accurately portrayed.	Attachment 3, Section 2.4.3, Number of Samples, footnote 12 (new Footnote 9) acknowledges the presence of the Fume Pond IHSS in the LWNEU. The current discussion on upgradient sources for PCBs is clear. No changes will be made to the text in Attachment 3, Section 2.4.3, Number of Samples.
	EPA	Specific	S2.52	Vol 2	S2.52. Page 16, Section 2.4.3, Lower Walnut Drainage EU, Surface Soil: These sections state that PCBs may be present in drainage sediments due to run-off from transformer sites in the IA but are not expected in surface soil. Due to the ephemeral nature of this drainage, and considering that run-off into this drainage is expected to decrease in the future; it is possible that drainage sediments may become exposed as surface soils. Currently, there are only 4 surface soil samples analyzed for PCBs in this EU and no samples from PMJM habitat areas. To address this data limitation, it is recommended that the PCB dataset for surface soil be amended to include surficial sediments from the drainage.	PCBs are not detected in the sediment within LWNEU. The requested addition of sediment samples to the surface soil data set would not change the risk assessment conclusions for the LWNEU. No changes will be made to the text in Attachment 3, Section 2.4.3, Lower Walnut Drainage EU, Surface Soil.
	EPA	Specific	S2.53	Vol 2	S2.53. Page 17, Section 2.4.3, Spatial Representativeness: It is indicated that due to the absence of historical sources in the EU, concentration gradients would not be expected. However, the EU is downgradient of the former wastewater treatment plant and ponds, which would be a potential source into the EU. Therefore, the presence of a concentration gradient would be best documented using results of sediment samples in Walnut Creek as it enters the EU compared to as it enters Pond A-5. Please revise the section to indicate the lack of soil samples in the northern portion of the EU is addressed through the use of sediment samples.	As stated, VOCs, SVOCs, and PCBs, are either non-detected or less than the PRGs/ESLs in sediment in the LWNEU. This also applies to sediment downgradient of Pond A-4 in the Upper Walnut Drainage EU. Concentration gradients are not apparent. Any further detailed analysis does not appear warranted considering the spatial representativeness of the data in the LWNEU is relatively good. No changes will be made to Attachment 3, Section 2.4.3, Spatial Representativeness.
	EPA	Specific	S2.54	Vol 2	S2.54. Page 28, Section 2.4.9, Lower Woman Drainage EU, PMJM, Number of Samples, 2nd to last sentence: Change "WBEU" to "LWOEU".	Attachment 3, Section 2.4.9, Lower Woman Drainage EU, Surface Soil in PMJM Habitat, Number of Samples, 2nd paragraph, the 5th sentence will be revised as suggested.
	EPA	Specific	S2.55	Vol 2	S2.55. Page 34, Section 2.5, Sediment and Surface Water Data Adequacy Assessment: The introduction on this page should be expanded to provide an overview of the data adequacy guidelines regarding the specific focus of the assessment to evaluate data adequacy within ponds (as supported by the AEU tables which indicate number of samples by pond for each AEU). In addition, the Spatial Representativeness sections do not consistently discuss the data adequacy considerations associated with ponds in each of the AEUs. Please review and revise the Spatial Representativeness sections for each AEU to include discussion of available data related to ponds (or other tributary notations) that support the data adequacy guidelines. For Woman Creek (page 39), a discussion of data associated with the intact portion of the SID should be added.	Data adequacy guidelines were established for the EUs and AEUs only. The tables present the number of samples per pond as additional information. It is evident from Figures A3.41 through A3.45 and A3.49 through A3.53 that there are adequate sediment and surface water data for the intact portion of the SID. No changes will be made to the text in Attachment 3, Section 2.5.
	EPA	Specific	S2.56	Vol 2	S2.56. Page 34 and Page 39, North Walnut and Woman Creek AEUs: The number of samples and/or spatial distribution of locations analyzed for fluoride are limited for these AEUs (see Volume 15B Figures 2.49 and 2.175). Please include a notation for each of these AEUs to indicate that the data limitations associated with fluoride will be discussed in Volume 15B.	Attachment 3, Section 2.5.1 (North Walnut Creek AEU) and Section 2.5.4 (Woman Creek AEU), Number of Samples and/or Spatial Representativeness, the text will be revised as suggested.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.57	Vol 2	S2.57. Page 37, Section 2.5.2, South Walnut Creek AEU, Temporal Representativeness: The second paragraph indicates that PCBs were never detected in surface water. However, Volume 15B2, Attachment 1, Table A.1.2.SWAEU.1, indicates that the detection limit was not adequate for evaluating the ESL. Please revise the text to indicate the limitation. It is agreed that in most scenarios, the low solubility of the compound make it unlikely for the chemical to be in water especially if co-located sediment concentrations are not significantly elevated. The text should be revised to indicate that current surface water samples for PCBs are not warranted unless sediment concentrations are elevated in the stream to be evaluated in Volume 15B2.	Attachment 3, Section 2.5.2, (South Walnut Creek AEU), Surface Water, Temporal Representativeness, 2nd paragraph, the text will be revised as suggested.
	EPA	Specific	S2.58	Vol 2	S2.58. Page 42, Section 2.5.5, Rock Creek AEU, Temporal Representativeness, last paragraph, 2nd sentence: Change “sediment PCB data” to “surface water PCB data”.	Attachment 3, Section 2.5.5 (Rock Creek AEU), Surface Water, Temporal Representativeness, 2nd paragraph, the last sentence will be revised as suggested.
	EPA	Specific	S2.59	Vol 2	S2.59. Page 43, Section 2.5.6, McKay Ditch AEU, Surface Water, Number of Samples: Change “RC AEU” to “MK AEU”.	Attachment 3, Section 2.5.6, (McKay Ditch AEU), Surface Water, Number of Samples, last sentence will be revised as suggested.
	EPA	Specific	S2.60	Vol 2	S2.60. Page 46, Section 2.5.7, Southeast AEU, Temporal Representativeness: This section utilizes VOC, SVOC, and PCB results from historical samples collected at the upstream western property boundary to support the conclusion that these analyte classes are not of concern for this drainage and that data are adequate for the drainage. While these samples demonstrate that analyte levels in surface water coming into RFETS were not above ESLs, they do not provide any information on levels in downstream (on-site) locations. This section should be revised to indicate that historical data from downstream locations (i.e., outfall of Pond D-1) as evidence to support the conclusion that additional on-site samples are not needed for SVOCs, VOCs, and PCBs. The limitation and uncertainty should be reflected in appropriate sections of Volume 13 (Southeast EU).	Attachment 3, Section 2.5.7 (Southeast AEU), Surface Water, Temporal Representativeness, 3rd paragraph, the second sentence will be modified as follows: VOCs, SVOCs, and PCBs were not detected in Pond D-1, and VOCs were detected below the ESL at the western (upstream) property boundary.
	EPA	Specific	S2.61	Vol 2	S2.61. Page 47, Section 2.6.1, Subsurface Soil, 2nd full paragraph, NW-167.1: This paragraph states that SVOC and VOC concentrations are “low”, but it does not identify the basis of these conclusions (i.e., low relative to what?). This paragraph should be revised to clarify the PRG/ESL used to make the determination that concentrations were “low”.	Attachment 3, Section 2.6.1, 4th paragraph, the text will be revised to state that the concentrations at the landfill seep discharge were typically at or below surface water action levels.
	EPA	Specific	S2.62	Vol 2	S2.62. Page 47, 2nd full paragraph, NW-167.1: The text states that “SVOCs do not migrate readily through the soil column and are expected to largely remain in the surface soil.” While migration potential may be limited for some SVOCs, this is certainly not true for all SVOCs. This statement should be revised to identify the migration potential of the particular SVOCs of interest for this IHSS.	Attachment 3, Section 2.6.1, 4th paragraph, the text will be revised to identify bis(2-ethylhexyl)phthalate as the SVOC of interest, and to state that bis(2-ethylhexyl)phthalate, which rarely exceeded the surface water action level, would not readily migrate through the soil column.
	EPA	Specific	S2.63	Vol 2	S2.63. Page 47, 3rd paragraph, NW-170: The text states that “radionuclides and metals do not migrate readily through the soil column and are expected to largely remain in the surface soil.” While migration potential may be limited for some metals, this is certainly not true for all metals. This statement should be revised to identify the migration potential of the particular metals of interest for this IHSS.	Attachment 3, Section 2.6.1, 6th paragraph, the text will be revised to indicate that the only metal of interest at NW-170 was vanadium, which was present at levels above the WRW ALs at two locations. The soil at these locations was excavated in 2005.
	EPA	Specific	S2.64	Vol 2	S2.64. Page 48, 3rd paragraph, NE-156.2: The text states that SVOCs are not expected contaminants in the soil and debris materials excavated during construction projects. However, it is not clear how this conclusion was reached. It is not clear whether construction projects where soil and debris were removed occurred in source areas and may include potential contaminants of concern. For example, if SVOCs were potential contaminants in these source areas, SVOCs should not be excluded as potential contaminants for this IHSS. This section should be expanded to discuss the nature of the soil and debris source materials with regard to potential for SVOC contamination.	Attachment 3, Section 2.6.1, 12th paragraph, the text will be revised to state that the IHSS was characterized as part the OU6 RFI/RI, and SVOCs were not a target analyte group based on existing data and process knowledge.



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	EPA	Specific	S2.65	Vol 2	S2.65. Page 50-51, Section 2.8, Surface Water Considerations, last sentence: Include a citation for the Colorado WQCC and WQCD policy and guidance referenced in this sentence.	Attachment 3, Section 2.8, 4th paragraph, 2nd sentence, the citation will be added.
	EPA	Specific	S2.66	Vol 2	S2.66. Tables A3.53 and A.3.54: The tables include the total number of samples by analyte group and include a list of the ponds that occur in each AEU with their corresponding number of samples. The table may be confusing because the number of samples listed for the ponds does not equal the total number shown for the analyte group. Please add a footnote to indicate that the total number presented represents locations for all surface water and sediment locations occurring throughout the AEU.	Attachment 3, Tables A3.53 and A3.54, the suggested footnote will be added.
	EPA	Specific	S2.67	Vol 2	S2.67. Figures: Bowman's Pond is referenced throughout the text, but is not identified on any figures. Please add the location of the pond to the figures.	Bowman's Pond is referenced in Attachment 3, Tables A3.52 through A3.54 but not in the text. A footnote will be added to these tables stating "Bowman's Pond was remediated through an accelerated action and filled in, and is no longer a surface water feature of the Walnut Creek drainage. The pond was centrally located at the north boundary of the former IA." No changes will be made to the figures.
	EPA	Specific	S2.68	Vol 2	S2.68. Figures: All figures in the attachment present sample locations by analyte groups (e.g., metals, SVOCs), giving the impression that all analytes for metals (or other analyte suites) were sampled at each of the locations shown on the figures. However, the summary tables for each analyte group indicate that specific chemicals within the analyte group are not actually sampled at the locations shown on the figures. In some cases, the figures may be misleading. For example, 1,3,5-trinitrobenzene and other SVOCs were only sampled 5 or 7 times, yet the figures present 100's of SVOC locations giving the impression that the all SVOCs were sampled at this location. Please provide a footnote on the figures to avoid misconceptions.	The "a" series of Tables A3.1 through A3.48 provide the number of samples for each analyte within the analyte groups in order to not be misleading that all analytes in the group are always analyzed in a given sample. This is further highlighted in a note to Table 1.2 of Volumes 3 through 15 that explains that the number of samples for an analyte group does not necessarily match the number of results for a given analyte within the group. No changes to figures in Attachment 3 will be made.
	EPA	Specific		Vol 2	ATTACHMENT 4 – Insignificant Pathways See General Comments	Attachment 4 will be revised to include a quantitative risk screening for the surface water and indoor air pathways based on meetings with EPA and CDPHE.
	EPA	Specific	S2.69	Vol 2	ATTACHMENT 5 – Background Summary Tables S2.69. FIGURES: This attachment should be revised to include maps of background sample locations for each environmental media.	Figures 2.4 and 2.5 provide the requested information. These figures are referenced along with Attachment 5 in the main text. No changes will be made to Attachment 5.
	EPA	Specific	S2.70	Vol 2	S2.70. TABLES: It appears that when the number of detected samples was zero, the table is left blank for the number of detects and the detection frequency. Revise the table to show 0 for the number of detects and 0% for the detection frequency. In addition, the tables should be revised to include a footnote that clarifies that statistics were calculated assuming a value of ½ the reported value for non-detects.	Attachment 5, Tables A5.1 through A5.7, will be revised as suggested.
	EPA	Specific		Vol 2	ATTACHMENT 6 - Tier 2 Methodology See General Comments.	Attachment 6 will be revised to reflect the change in procedure noted in the general comment.
	EPA	Specific	S2.71	Vol 2	ATTACHMENT 7 – ERA Uncertainties S2.71. Page 4, Section 1.5, 1st sentence: Change "...are discussed in the previous sections." to "...are discussed in Volumes 3 through 15."	Attachment 7, Section 1.5, 1st paragraph, 1st sentence, will be revised as suggested.
	EPA	Specific	S2.72	Vol 2	S2.72. Page 5, Section 1.5, last paragraph: The paragraph states that the lowest LOAEL was selected as the wildlife TRV. This is not true. This section should be revised to include a description of the TRV selection process as provided in the CRA Methodology, which included the selection of a NOAEL TRV based on a source hierarchy.	Attachment 7, Section 1.5, 3rd paragraph, 2nd sentence, the statement that the lowest LOAEL was selected as the wildlife TRV will be deleted from the text. Attachment 7, Section 1.5, 3rd paragraph, last sentence, will also be revised to state that the overall development process for ESLs provides a consistently conservative bias to ensure that risks are not underestimated.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.73	Vol 2	ATTACHMENT 8 – Site-wide Professional Judgment S2.73. Sections 2.0 and 3.0: The Process Knowledge and Spatial Trends sections have neglected to include chemical-specific discussions for cadmium. Please revise the document to include discussions for cadmium.	Cadmium was not carried forward into the professional judgment step of the COC/ECOPC screening process. No changes will be made to Attachment 8, Sections 2.0 and 3.0.
	EPA	Specific	S2.74	Vol 2	S2.74. Section 3.0, PMJM: The use of the “3x the ESL” approach for evaluating whether a chemical should be retained as an ECOPC for the PMJM is not an appropriate line of evidence to use when evaluating the special status species. It is not clear whether 3x the ESL for certain ESLs may be above or at an effect level. As indicated in the CRA Methodology, the approach for the PMJM is intended to be more conservative than for other non-special status species. Conclusions to retain an ECOPC should reflect a more conservative bias in cases where there is any question as to the potential for an ECOI to be retained for further evaluation. Please revise the text and figures to exclude this type of evaluation for the PMJM. Please revise discussions for chromium, copper, and manganese, and remove this evaluation from the corresponding figures. Conclusions which eliminated a chemical based on this line of evidence should be revised and the chemical retained if other lines of evidence suggesting the ECOI can unequivocally be eliminated are not available.	The “3x the ESL” is simply a benchmark to show relative concentrations of the metals for the purpose of displaying spatial trends. Typically the upper range of concentration is “3x background MDC” because the ESL is typically less than the background MDC. For chromium, copper, and manganese, the PMJM ESL is greater than the background MDC so “3x the ESL” becomes the upper range of concentrations. These concentrations are only used to evaluate spatial trends. No changes will be made to Attachment 8, Section 3.0.
	EPA	Specific	S2.75	Vol 2	S2.75. Page 9, Section 3.2, Antimony, Non-PMJM: The last two sentences are in direct conflict with each other. The first sentence states that antimony cannot be eliminated as an ECOPC for the IDEU, NNEU, UWNEU, IAEU, and LWOEU (this is also what is reflected in Table A8.1). The second sentence states that antimony in the IDEU, LWNEU, and LWOEU are due to naturally occurring levels. In addition, based on the evidence presented, concentrations in the LWOEU may not be due to naturally occurring levels. The LWOEU is one of the EUs identified in the process knowledge section for antimony as one of the areas where contamination is expected. Therefore, antimony should be retained as an ECOPC for the LWOEU. This section should be revised to rectify these discrepancies.	Attachment 8, Section 3.2, Surface Soil (Non-PMJM), 1st paragraph, last sentence, IDEU will be deleted. No ECOPCs will be added to LWOEU for non-PMJM receptors per the agency meeting on 4/12/06.
	EPA	Specific	S2.76	Vol 2	S2.76. Page 12, Section 3.6, Chromium, Non-PMJM: It is suggested that chromium reflects naturally occurring concentrations and is not selected as an ECOPC for RCEU, IDEU, LWNEU, SWEU, and SEEU. However, there are a large number of locations with concentrations greater than maximum background concentrations in each of the EUs. Chromium was known to be used at the site and the spatial trends figures indicate that the highest concentrations (e.g., greater than 3 times the maximum background) are spatially oriented in process areas. It is recommended that chromium be retained to ensure a conservative assessment.	Attachment 8, Section 3.6, Surface Soil (Non-PMJM), chromium will not be added as an ECOPC per the agency meeting on 4/12/06.
	EPA	Specific	S2.77	Vol 2	S2.77. Page 12, Section 3.6, Chromium, PMJM: According to Table A8.1, chromium was statistically above background for PMJM habitats in SWEU. Please add “SWEU” to the list presented in the first sentence. Since chromium is an expected contaminant at RFETS, and the data set associated with the PMJM habitat is limited, and there are concentrations are above the ESL, and due to the special status of the species, it is requested that chromium be identified as an ECOPC for RCEU, LWNEU, and SWEU.	Chromium will not be added as an ECOPC per the agency meeting on 4/12/06.
	EPA	Specific	S2.78	Vol 2	S2.78. Page 13, Section 3.7, Copper, PMJM: The last sentence in this section refers to copper in surface soil for the UWNEU, yet copper was not above background for this EU. This final sentence should be removed.	Attachment 8, Section 3.7, Surface Soil (PMJM), the last sentence will be deleted.
	EPA	Specific	S2.79	Vol 2	S2.79. Page 15, Section 3.10, Manganese, non-PMJM: Since there is an exceedance of 3 times the ESL and several exceedances greater than the maximum background, it is recommended that manganese be retained as an ECOPC in RCEU. In addition, it is not clear why NNEU and IAEU are being discussed since the EU concentrations were found to be statistically below background for these two EUs. Please revise the text to address these issues.	Attachment 8, Section 3.10, Surface Soil (Non-PMJM), manganese will not be added as an ECOPC for non-PMJM receptors per the agency meeting on 4/12/06. The two sentences referring to the NNEU and IAEU will be deleted.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Specific	S2.80	Vol 2	S2.80. Page 15, Section 3.10, Manganese, PMJM: Since there are elevated concentrations located near historical IHSSs, the 2nd sentence should be revised to clarify that this statement is specific to RCEU. In addition, as written, this section only provides conclusions for UWOEU and LWOEU, yet manganese was also identified for RCEU. Based on a review of the spatial distribution (Figure A8.18) it is recommended that manganese be retained as an ECOPC for PMJM in the RCEU.	Attachment 8, Section 3.10, Surface Soil (PMJM), the 2nd sentence will be revised to clarify that this statement is specific to RCEU. A conclusion will be provided for the RCEU.
	EPA	Specific	S2.81	Vol 2	S2.81. Page 16, Section 3.12, Molybdenum, Non-PMJM, 2nd to last sentence: Change "UWNEU" to "UWOEU".	Attachment 8, Section 3.12, Surface Soil (Non-PMJM), it is the second sentence that is in error. UWOEU will be changed to UWNEU.
	EPA	Specific	S2.82	Vol 2	S2.82. Page 16, Section 3.12, Molybdenum, Non-PMJM: Upon review of the spatial map for molybdenum, exceedances within the WBEU tend to be located within or near IHSSs. Therefore, it is not appropriate to conclude that molybdenum concentrations in soil within the WBEU are due to naturally occurring levels. This section should be revised to retain molybdenum as a surface soil ECOPC for the WBEU.	Attachment 8, Section 3.12, Surface Soil (Non-PMJM), molybdenum will not be added as an ECOPC for non-PMJM receptors per the agency meeting on 4/12/06.
	EPA	Specific	S2.83	Vol 2	S2.83. Page 17, Section 3.14, Selenium, Non-PMJM and PMJM: Upon review of the spatial figures for selenium (Figure A8.24 and A8.25), detected concentrations of selenium are nearly always associated with IHSSs or other potentially site-impacted areas. Based on this observation, it is not appropriate to assume that surface soil concentrations of selenium in the UWNEU, LWNEU, and IAEU are due to naturally occurring levels. This section should be revised to retain selenium as a surface soil ECOPC for these EUs.	Attachment 8, Section 3.14, Surface Soil (Non-PMJM) and Surface Soil (PMJM). For the non-PMJM surface soil in LWNEU and IAEU, a background comparison was not performed because selenium was detected in less than 20 percent of the EU samples. For the IAEU, the EPC is less than the minimum ESL. Therefore only LWNEU requires a spatial trend analysis for selenium. The text will be modified accordingly. Selenium will not be added as an ECOPC for PMJM or non-PMJM receptors per the agency meeting on 4/12/06.
	EPA	Specific	S2.84	Vol 2	S2.84. Page 19, Section 3.17, Tin, PMJM: For the LWOEU, the statement that tin is either "non-detected or detected at concentrations less than the [PMJM] ESL" is not supported by the spatial map (see Figure A8.29). Concentrations in Patch #25 are both above the ESL and at levels more than 3x the background MDC. In addition, the preceding Non-PMJM section for tin states that tin cannot be eliminated as an ECOPC. Therefore, tin should be retained for the LWOEU.	Attachment 8, Section 3.17, Surface Soil (PMJM), the text will be revised to state that tin cannot be eliminated as an ECOPC in PMJM habitat in the LWOEU.
	EPA	Specific	S2.85	Vol 2	S2.85. Page 19, Section 3.18, Uranium, Non-PMJM: Upon review of the spatial map for uranium (Figure A8.30), detected concentrations of uranium are always associated with IHSSs. The figure indicates that there are several locations in the IA that are greater than 3 times the maximum detected background concentrations. Therefore, it is not appropriate to conclude that concentrations in the IAEU and the WBEU are representative of naturally occurring levels. This section should be revised to present a more balanced interpretation of the spatial distribution. The IAEU is excluded since the EPC is below the limiting ESL, however, uranium should be designated as an ECOPC for the WBEU.	Attachment 8, Section 3.18, Surface Soil (Non-PMJM), uranium will not be added as an ECOPC for non-PMJM receptors per the agency meeting on 4/12/06.
	EPA	Specific	S2.86	Vol 2	S2.86. Figures: The figures include a yellow circle defined as "Concentration > Background MDC and <= 3x Background MDC". Please clarify the legend to indicate the symbol also designates locations that are > than the ESL. In addition, the text throughout Attachment 8 refers to specific EUs as identified on Figures A8.1 through A8.35. However, the EUs are not designated on the figures. It is recommended that EU names be designated on the figures.	Attachment 8, Figures. The legends are accurate as written, so no changes will be made to the figures in Attachment 8.
	EPA	Specific	S2.87	Vol 2	ATTACHMENT 9 – Background Risks S2.87. Page 5, Section 4.1, last paragraph: While background risks above a level of concern may indicate that the exposure and/or toxicity parameters used to assess potential risks are conservative, it may also indicate that the background dataset may be influenced by impacts that are not site-related. This paragraph should include a reference to the fact that elevated HQs in background areas may suggest that the background area is influenced by non-site-related impacts.	We are not aware of any activity at RFETS' or at off-site background locations that would cause non-site related contamination. Background risks are included for comparison purposes, and statements about the conservative nature of ESLs based on background levels will be deleted. No changes will be made to Attachment 9.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
WAEU	CDPHE	Specific	3.1	Vol 3	3.1 Executive Summary – It would be helpful to include the following: (a) It should be stated that only arsenic was evaluated in the professional judgment step.	Executive Summary, 2nd paragraph will be modified to include the following: No COCs were selected in surface soil/surface sediment and subsurface soil/subsurface sediment during completion of the HHRA COC selection process. Only one analyte (arsenic) had concentrations in WAEU surface soil/surface sediment, that were statistically greater than RFETS background. However, arsenic was subsequently eliminated as a COC in the professional judgment evolution step of the COC selection process because the weight of evidence supports the conclusion that arsenic concentrations in the WAEU are not the result of RFETS activities, but rather are representative of naturally occurring concentrations.
WAEU	CDPHE	Specific	3.1	Vol 3	(b) This section provides risk estimates only for the site-specific background concentrations for arsenic (i.e., 2E-06) but does not identify that these risks are from arsenic. Additionally, the potential risk estimate of about 3E-06 for arsenic for the WRW and WRV, as discussed in the professional judgment evaluation, should also be included.	Risks estimate will be added for the WRW and WRV for the WAEU (from the professional judgment evaluation). In addition, in the Executive Summary, 2nd paragraph, text will be added to clarify that potential risks are from exposure to arsenic.
WAEU	CDPHE	Specific	3.2	Vol 3	3.2. Section 6.1 - Uncertainty Associated with the Data – There are no surface soil/surface sediment data for organics. This uncertainty should be acknowledged as the potential underestimation of risk in this section and in the uncertainty evaluation summary Section 6.4.	Organic data are available for surface sediment. There are no organic data for surface soil. This uncertainty will be discussed in Section 10.1.1, Uncertainties Associated with Data Adequacy and Quality, in Section 11.1, Data Adequacy, and in Section 11.3, Ecological Risk.
WAEU	CDPHE	Specific	3.3	Vol 3	3.3 Section 11.0 - Summary and Conclusions – This section only provides a summary of the COC selection process and does not provide conclusions regarding the potential health risks as noted in the executive summary.	Text will be added to Section 11.0 that summarizes the conclusions regarding potential health risks.
WAEU	CDPHE	Specific	3.4	Vol 3	3.4. Executive Summary – Please revise this section in accordance with the following comments: (a) It is important to state that the following ECOIs were evaluated in the professional judgment evaluation: aluminum, arsenic, chromium, lithium, and thallium.	Executive Summary, 3rd paragraph will be modified to discuss the ECOIs that were included in the professional judgment evaluation.
WAEU	CDPHE	Specific	3.4	Vol 3	(b) The text states risks to ecological receptors are likely to be negligible in this EU because no ECOPCs were identified. This statement cannot be supported by quantitative risk estimates because no risk characterization was performed. Additionally, this statement is too broad to capture the impact of the various screening steps in the selection of ECOPCs as well as the professional judgment evaluation.	The ECOPC selection process is a screening level risk assessment. Screening values are compared to maximum detected concentrations. In the Executive Summary, a new 3rd paragraph will be added that summarizes in more detail the ECOPC identification process. This same paragraph will be added as the first paragraph of Section 11.3.  Executive Summary, a new 4th paragraph will be added as follows: Because this process did not identify any ECOPC in the WAEU, no risk characterization was performed and site-related risks are likely to be minimal for the ecological receptors evaluated in the WAEU. In addition, data collected on wildlife abundance and diversity indicate that wildlife species richness remains high at RFETS. Because there are no significant risks to ecological receptors or high levels of uncertainty with the data, there are no ecological contaminants of concern (ECOCs) for the WAEU.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
WAEU	CDPHE	Specific	3.5	Vol 3	3.5. Uncertainty Analysis – Please note the following comments: (a) Section 10.1.1 – Uncertainty Associated with Data Adequacy and Quality – This section should discuss EU-specific sources of uncertainties associated with the available data. Additionally, it is important to discuss the adequacy of detection limits for the risk characterization. For example, risks associated with non-detected or infrequently detected ECOIs/ECOPCs with detection limits higher than the ESLs cannot be assumed to be low or negligible. These chemicals should be addressed as a source of uncertainty.	Section 1.2 will be expanded to include more detail on data adequacy. Section 10.1.1 provides a brief summary and refers back to Section 1.2 for this detailed information.
WAEU	CDPHE	Specific	3.5	Vol 3	(b) Section 10.1.3 – Uncertainty associated with elimination of ECOIs based on professional judgment- It is inappropriate to claim that the professional judgment evaluation has little effect in the overall risk calculation. The magnitude of impact is unknown. This is one of the reasons why the overall conclusions cannot be classified as “likely to be negligible risks”.	As discussed in Section 10.1.3, the professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to state “unlikely to have a significant effect.”
WAEU	CDPHE	Specific	3.5	Vol 3	(c) Section 10.2 - Summary of significant Sources of Uncertainty – It is not appropriate to state that the CRA process was designed to be of a conservative nature, which should be taken into consideration when reviewing the conclusions of the risk assessment. Please revise this statement to reflect the overall uncertain nature of risk evaluation process (i.e., under- and over-estimation to an unknown degree) and it is important for risk managers and public to keep this in mind when interpreting the results of a risk assessment.	Section 10.2 (Section 10.1.4 in new version of Volume 3) Summary of Significant Sources of Uncertainty, the following text will be added: While some of the sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many results in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.
WAEU	CDPHE	Specific	3.6	Vol 3	3.6. Section 11.0 - Summary and Conclusions – The overall stated conclusions, “...a risk characterization was not performed and potential risks to ecological receptors in the WAEU are likely to be negligible.” cannot be supported by the quantitative risk estimates. If no risk characterization step is performed, it does not mean that risks are likely to be negligible. Additionally, there is significant uncertainty associated with the elimination of certain ECOIs before the risk characterization step.	Section 11.3, 2nd paragraph will be modified as follows: Because this process did not identify any ECOPCs in the WAEU, no risk characterization was performed and site-related risks are likely to be minimal for the ecological receptors evaluated in the WAEU.
WAEU	CDPHE	Specific	3.7	Vol 3	Attachment 3: 3.7. Section 4.0-Professional Judgment - Background Comparisons - Please note the following comments: (a) Comparison of RFETS data to background data – It is not appropriate to use concentration ranges based on minimum and maximum values to discuss comparison of site-specific and background data sets. This type of discussion defeats the purpose of conducting statistical comparisons using the underlying distributions of both data sets. For the same reason, it is inaccurate to place emphasis on a single MDC background value. Box plots should be used for detailed qualitative statements regarding the comparisons between the site and background data sets.	Attachment 3, Section 4.0: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
WAEU	CDPHE	Specific	3.7	Vol 3	(b) Comparison of RFETS background data to Western States soils - Too much weight is given to the comparison of site data with the Western State background data. These comparisons cannot be given much weight in the weight-of evidence evaluation because of the following reasons: (i) these comparisons are not performed in a statistical manner; and (ii) in accordance with the USEPA guidelines for background comparisons, site-specific background represents the most important data set to reflect the site-specific contamination.	Background concentrations from Colorado and the bordering states are only one line of evidence in the professional judgment evaluation. The comparison to these regional background concentrations is not given any special significance relative to other lines of evidence. However, footnote 3 in Attachment 3 will be modified to note that the concentrations are simply regional benchmarks for naturally-occurring metals.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
WAEU	CDPHE	Specific	3.7	Vol 3	(c) Comparison of site background data to ESLs – It is not appropriate to use a comparison of ESLs to the RFETS background to demonstrate the conservative nature of ESLs. However, it is important to characterize background risks by discussing the magnitude and frequency of exceedance of HQ = 1.0. For perspective, these background risks should be compared with RFETS- specific risks in terms of the magnitude and frequency of exceedance. This information should be discussed in the risk characterization.	Attachment 3, Section 4.5.5 Lithium Risk Potential for Plants and Wildlife, Surface Soil (Non-PMJM), the following sentence will be deleted: Because risks to ecological receptors are not expected at background concentrations, the terrestrial plant ESL may be overly conservative.
WAEU	CDPHE	Specific	3.8	Vol 3	3.8. Section 4.0 - Professional Judgment -ECOs evaluated in the Professional Judgment - Overall, it appears that in many cases ECOs were eliminated prematurely based on the following lines of evidence: Process knowledge, pattern recognition, and comparison to RFETS and other background data. For example, log-probability plots are given too much weight and the limited power of this approach to detect the occurrence of two populations is not taken into consideration. Additionally, arsenic, for example, cannot be eliminated as an ECOPC based on comparison to the Western State soil data when the RFETS date is statistically higher than the RFETS background data.	The professional judgment evaluation is a balanced approach of looking at various lines of evidence to ensure a PCOC/ECO is actually a contaminant when the statistical analysis suggests it may be a contaminant. The log-probability plots are only one line of evidence and are not given any additional weight relative to other lines of evidence. Furthermore, the limitations of the log-probability plots are discussed in footnote 2 on page 4. Additional weight is given to the pattern recognition because, if the spatial trend evaluation indicates clustering of elevated metal concentrations near historical IHSSs in the EU under consideration, this line of evidence is significant enough for the metal to be considered a COC/ECOPC regardless of process knowledge or other lines of evidence. This approach was intended to be conservative. Arsenic was eliminated as an ECOPC because the weight of evidence (all lines of evidence) suggests it is not a contaminant. No changes will be made to the text. ECOPCs will not be added to the WAEU per the agency meeting on 4/12/06.
WAEU	EPA	Specific	S3.1	Vol 3	SPECIFIC COMMENTS FOR VOLUME 3, WEST AREA EU S3.1. Page 7, Subsurface Soil Evaluation for Non-PMJM Receptors: In the pre-draft CRA Volume 3 (April 2005), the subsurface soil evaluation acknowledged that the 2 locations where subsurface soil samples were collected have subsequently been disturbed and hence are no longer representative of current conditions. This text has been removed from the October 2005 draft, yet the issues identified previously with the subsurface soil data set still remain. Because the only available subsurface soil samples are no longer representative of current conditions, the data should not be used quantitatively. The data adequacy summary should be revised to state that the 2 subsurface soil sampling locations are no longer representative of current conditions and that the existing subsurface soil data are not adequate for quantitative risk computations. In light of this data gap, other data and/or other knowledge should be used to argue why risk management conclusions may still be possible. In the event that these arguments are considered persuasive by the Agencies, then these lines of evidence can be used to explain how the subsurface soil risk characterization can be achieved even though data are lacking.	Section 7.3, 1st paragraph, the following text will be added back into the document: Soil in the area where the subsurface soil samples were collected has subsequently been impacted by mining activities and the data from the impacted soil are not representative of current conditions. For purposes of conservatism, the subsurface soil data are assessed as though no disturbance has occurred.  Sample data that are given an NLR designation, represent soil at a sampling location that has been removed during remediation. Because it is conservative to use the data, the data that are not representative of current conditions will not be flagged as a data adequacy issue.
WAEU	EPA	Specific	S3.2	Vol 3	S3.2. Page 2, Section 1.1, last paragraph – West Spray Field: This paragraph should identify the contaminants (or analyte groups) potentially present in the West Spray Field (IHSS 186) due to site activities. In addition, the text should summarize which the exposure pathways and receptors were evaluated as part of the “CDPHE risk-based conservative screen” and NFA CD/ROD for IHSS 168.	Because the West Spray Field is outside of the WAEU and downwind and hydraulically downgradient, the requested information would add little, if any, value to the WAEU risk assessment. No changes will be made to the text.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
WAEU	EPA	Specific	S3.3	Vol 3	S3.3. Attachment 1, Detection Limit Adequacy Evaluation: Detection limits (DLs) for selenium in all 10 surface soil samples were above the ESL, with reported DLs between 2-3 times higher than the ESL. Currently, the text states that "there is some uncertainty with the reported results for nondetected analytes in surface soil in the WAEU", but does not address how this will influence risk decisions. The text should be revised as follows: "The DLs achieved for selenium in surface soil were not adequate to assess potential risks to terrestrial receptors. However, had DLs in these samples been lower, the resulting NOAEL-based HQs would likely be less than 3. Therefore, it is concluded that risks from selenium in surface soil are likely to be low, and the fact that selenium DLs were too high contributes only minimal uncertainty to the overall risk conclusions."	The text of Attachment 1 will be entirely revised. With respect to surface soil, the text now states that because only one analyte (selenium) has reported results that exceed the minimum ESL, and for this analyte, the reported results are the same order of magnitude as the minimum ESL, this represents only minimal uncertainty in the overall risk conclusions. This achieves the same objective as the suggested change to the text without being "quantitative" about potential risks if the DLs were lower.
WAEU	EPA	Specific	S3.4	Vol 3	S3.4. Attachment 3, Page 8, Arsenic, Comparison to Background: The comparison of WAEU arsenic concentrations to the Western States background data set provided by Shacklette and Boemgen (1984) illustrates why use of a wide-ranging background data set is not preferred. The text states that arsenic concentrations in the WAEU, which range from 3.6 to 22 mg/kg, are within the range of the Western States soils (1.22 to 97 mg/kg). However, maximum arsenic concentration in the Western States soil data set is from a soil sample collected in Arizona. If the comparison had been restricted to soils from Colorado only, for which the maximum arsenic concentration is 16 mg/kg, the conclusion would have been that arsenic concentrations in the WAEU are outside of the range expected for Colorado. Please remove or revise the comparison to report the comparisons based on Colorado.	Comparison to Western States background data is only one line of evidence in professional judgment, and other lines of evidence such as pattern recognition and process knowledge also support that arsenic is naturally occurring. Therefore, no changes will be made to the text.
WAEU	EPA	Specific	S3.5	Vol 3	S3.5. Attachment 3, Page 11, Chromium, Process Knowledge: This paragraph incorrectly makes reference to the SWEU rather than the WAEU.	Attachment 3, Section 4.4.1, 1st sentence will be modified as follows: As discussed in Appendix A, Volume 2, Attachment 8 of the RI/FS Report, process knowledge indicates the potential for chromium to be an ECOPC in the WAEU is low due to a moderate inventory, and limited identification as a constituent in wastes generated at RFETS and localized documented historical source areas remote from WAEU.
WAEU	EPA	Specific	S3.6	Vol 3	S3.6. Table 1.1: Because data adequacy is evaluated separately for each analysis group, the row for "Organics" should be split into the following analysis groups: SVOCs, VOCs, PCBs, Pesticides, Herbicides, Dioxins.	The purpose of Table 1.1 is to give the reader a general understanding of the number of inorganic, organic and radionuclide samples in each medium for a given EU. The subsequent summary statistic tables in Section 1 provide more detailed breakdown on the number samples and the results. No changes will be made to Table 1.1.
RCEU	CDPHE	Specific	4.1	Vol 4	4.1. Executive Summary – It would be helpful to include the following: (a) It is important to identify chemicals of potential concern (PCOCs) that were evaluated in the professional judgment step for surface soil/surface sediment (i.e., arsenic, cesium-137, manganese, and radium-228). However, no PCOCs in subsurface soil/subsurface sediment were evaluated using professional judgment because they were not found to be greater than background and PRGs	Executive Summary, 3rd paragraph, the following text will be added: Only four analytes in surface soil/surface sediment, arsenic, cesium-137, manganese, and radium-228, had concentrations in the RCEU that were statistically greater than RFETS background. In addition, the following sentence was also added: However, these analytes were subsequently eliminated as COCs in the professional judgment evaluation step of the COC selection process because the weight of evidence supports the conclusion that concentrations of these analytes in the RCEU are not the result of RFETS activities, but rather are representative of naturally occurring concentrations.  The following sentence will also be added to the 3rd paragraph: No analytes in subsurface soil/subsurface sediment were statistically greater than RFETS background.
RCEU	CDPHE	Specific		Vol 4	(b) Cancer risks-This section discusses cancer risks pertaining to arsenic alone and provides no discussion regarding the potential cancer risks of 5E-06 and 2E-05 from cesium-137 and radium-228, respectively. Similarly, this section provides risk estimates only for the site-specific background concentrations for arsenic (i.e., approximately 2E-06) but does not identify that these risks are from arsenic. Additionally, it is important to discuss background risks from cesium-137 and radium-228. It is important to emphasize that RFETS concentrations for these ECOLs were statistically higher than the RFETS background concentrations.	Executive Summary, 3rd paragraph: Cancer risks for cesium-127 and radium-228 in the RCEU and background will be added to this section. Text will be revised to clearly identify risks associated with arsenic in the RCEU and background. Text states that these analytes (arsenic, cesium-127, and radium-228) have concentrations that are statistically greater than background.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
RCEU	CDPHE	Specific		Vol 4	(c) Noncancer risks – This section does not provide noncancer site-specific HQ of manganese and only discusses background HQ.	Executive Summary, 3rd paragraph, the following sentences will be added: The estimated HQ for the WRW for manganese in samples collected from the RCEU is 0.2 versus 0.1 in RFETS background samples. The estimated HQ for the WRV for manganese in samples collected from the RCEU is 0.1 versus 0.04 in RFETS background samples.
RCEU	CDPHE	Specific	4.2	Vol 4	4.2. Summary and Conclusions (section 11.0) – This section only provides a summary of the COC selection process and does not provide conclusions regarding the potential health risks as noted in the executive summary.	Section 11.2 Human Health, 1st paragraph: The same text that will be added to the Executive Summary summarizing the conclusions regarding potential health risks will be added to this section.
RCEU	CDPHE	Specific		Vol 4	Ecological Risk Assessment 4.3. Executive Summary – Please revise this section in accordance with the following comments: (a) It is important to include a list of ECOIs that were evaluated in the professional judgment evaluation. Also, it is necessary to indicate that PMJM receptor was evaluated in the RCEU for the following ECOIs: chromium, manganese, molybdenum, nickel, tin, and vanadium.	The text will be revised to include more detail on the ECOPC identification process.
RCEU	CDPHE	Specific		Vol 4	(b) The text states risks to ecological receptors are likely to be negligible in this EU because no ECOPCs were identified. This statement cannot be supported by quantitative risk estimates because no risk characterization was performed. Additionally, this statement is too broad to capture the impact of the various screening steps in the selection of ECOPCs as well as the professional judgment evaluation.	The ECOPC selection process is a screening level risk assessment. Screening values are compared to maximum detected concentrations. In the Executive Summary, a new paragraph will be added that summarizes in more detail the ECOPC identification process. This same paragraph will be added in the Summary and Conclusions Section.
RCEU	CDPHE	Specific	4.4	Vol 4	4.4. Uncertainty Analysis – Please note the following comments: (a) Section 10.1.1- Uncertainty Associated with Data Adequacy and Quality – This section should discuss EU-specific sources of uncertainties associated with the available data. Additionally, it is important to discuss the adequacy of detection limits for the risk characterization. For example, risks associated with non-detected or infrequently detected ECOIs/ECOPCs with detection limits higher than the ESLs cannot be assumed to be low or negligible. These chemicals should be addressed as a source of uncertainty.	Section 1.2 will be expanded to include more detail on data adequacy. Section 10.3.1 (formerly Section 10.1.1) will provide a brief summary and refer back to Section 1.2 for this detailed information.
RCEU	CDPHE	Specific		Vol 4	(b) Section 10.1.3 – Uncertainty associated with elimination of ECOIs based on professional judgment - It is inappropriate to claim that the professional judgment evaluation has little effect in the overall risk calculation. The magnitude of impact is unknown. This is one of the reasons why the overall conclusions should not be classified as "likely to be negligible risks".	As discussed in Section 10.3.3 (formerly Section 10.1.3), the professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to state "unlikely to have a significant effect."
RCEU	CDPHE	Specific		Vol 4	(c) Section 10.2 - Summary of Significant Sources of Uncertainty – It is not appropriate to state that the CRA process was designed to be of a conservative nature, which should be taken into consideration when reviewing the conclusions of the risk assessment. Please revise this statement to reflect the overall uncertain nature of risk evaluation process (i.e., under- and over-estimation to an unknown degree) and it is important for risk managers and public to keep this in mind when interpreting the results of a risk assessment.	Section 10.3.4 (formerly Section 10.2) Summary of Significant Sources of Uncertainty, the following text will be added: While some of the sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many results in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.
RCEU	CDPHE	Specific	4.5	Vol 4	4.5. Section 11.0 - Summary and Conclusions – The overall stated conclusions, "...a risk characterization was not performed and potential risks to ecological receptors in the WAEU are likely to be negligible" cannot be supported by the available evidence. If no risk characterization step is performed, it does not mean that risks are likely to be "negligible." There is significant uncertainty associated with the elimination of certain ECOIs before the risk characterization step. In summary, without a quantitative risk characterization, the conclusion that risks are "likely to be negligible" cannot be justified.	Since ECOPCs were added for the PMJM, the following text will be added to Section 11.3 (formerly Section 11.0): Based on default calculations, site-related risks are likely to be minimal to low for the ecological receptors evaluated in the RCEU.
RCEU	CDPHE	Specific	4.6	Vol 4	4.6. Attachment 3: Section 4.0- Professional Judgment - Background Comparisons – Please note the following comments: (a) Comparison of RFETS data to background data – It is not appropriate to use concentration ranges based on minimum and maximum values to discuss comparison of site-specific and background data sets. This type of discussion defeats the purpose of conducting statistical comparisons using the underlying distributions of both data sets. For the same reason, it is inaccurate to place emphasis on a single MDC background value. Box plots should be used for detailed qualitative statements regarding the comparisons between the site and background data sets. In addition, it is not appropriate to make subjective statement such as the RCEU data are slightly elevated compared to background	Attachment 3, Section 4.0: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
					when the RFETS concentrations are statistically higher than the RFETS background data set.	
RCEU	CDPHE	Specific	4.6	Vol 4	(b) Comparison of RFETS background data to Western States soils - Too much weight is given to the comparison of site data with the Western State background data. These comparisons cannot be given much weight in the weight-of evidence evaluation because of the following reasons: (i) these comparisons are not performed in a statistical manner; and (ii) in accordance with the USEPA guidelines for background comparisons, site-specific background represents the most important data set to reflect the site-specific contamination.	Attachment 3, Section 4.0 Professional Judgment: Background concentrations from Colorado and the bordering states are only one line of evidence in the professional judgment evaluation. The comparison to these regional background concentrations is not given any special significance relative to other lines of evidence. However, footnote 3 in Attachment 3 will be modified to note that the concentrations are simply regional benchmarks for naturally-occurring metals.
RCEU	CDPHE	Specific	4.6	Vol 4	(c) Comparison of site background data to ESLs – It is not appropriate to use a comparison of ESLs to the RFETS background to demonstrate the conservative nature of ESLs. However, it is important to characterize background risks by discussing the magnitude and frequency of exceedance of HQ = 1.0. For perspective, these background risks should be compared with RFETS- specific risks in terms of the magnitude and frequency of exceedance. This information should be discussed in the risk characterization	Attachment 3, Section 4.0 Professional Judgment: Background risk is discussed in both the uncertainty analysis and the risk characterization. Information relating to background risk is only presented in the professional judgment discussion to indicate that the ESL is not useful to predict risks above background concentrations. Background risk was not included in the rationale for elimination of any ECOI from further consideration as an ECOPC in the professional judgment discussion. No changes will be made based on this comment.
RCEU	CDPHE	Specific	4.6	Vol 4	(d) Comparison of PMJM data to the Western State Soils – Use of the Western State data for the PMJM is not appropriate because the PMJM occurs only along the Front Range of Colorado.	Attachment 3, Section 4.0 Professional Judgment: Discussions regarding regional background data in the PMJM portions of the professional judgment discussions will be removed.
RCEU	CDPHE	Specific	4.7	Vol 4	4.7. Attachment 3, Section 4.0 – Professional Judgment – ECOIs Evaluated in the Professional Judgment – Please note the following comments: (a) Based on the professional judgment evaluation, several chemicals should be carried forward into the risk characterization step (e.g., barium, chromium, nickel, manganese, molybdenum, tin, and zinc).	Attachment 3, Section 4.0 Professional Judgment: Per an agency meeting on 4/12/06, it was agreed that manganese and tin would be considered ECOPCs for the PMJM. It was also agreed at the meeting that no ECOPCs would be added for non-PMJM receptors.
RCEU	CDPHE	Specific	4.7	Vol 4	(b) Log-probability plots are given too much weight and the limited power of this approach to detect the occurrence of two populations is not taken into consideration. Please note that the statistical comparison to the RFETS background provides the highest weight-of-evidence	The log-probability plots are only one line of evidence and are not given any additional weight relative to other lines of evidence. Text related to probability plots will be reviewed and revised if appropriate for accuracy.
RCEU	CDPHE	Specific	4.7	Vol 4	(c) Elimination of two phthalates as common laboratory contaminants should be better justified.	Attachment 3, Section 4.0 Professional Judgment: The two phthalates were not eliminated based on being common laboratory contaminants. No changes will be made to the text.
RCEU	EPA	Specific	S4.1	Vol 4	SPECIFIC COMMENTS FOR VOLUME 4, ROCK CREEK EU S4.1. Page 2, Section 1.1, last paragraph: While there are no IHSSs in RCEU, there are IHSSs present in the IDEU located near the RCEU boundary. This paragraph should include a discussion of these adjacent IHSSs and the potential for any transport of contaminants from these IHSSs into the RCEU.	Section 1.1, the following text will be added: There are IHSSs and PACs in the adjacent Inter-Drainage Exposure Unit (IDEU); however, because the RCEU is hydraulically isolated from the IDEU and generally upwind, contaminant transport to the RCEU from the IDEU is unlikely.
RCEU	EPA	Specific	S4.2	Vol 4	S4.2. Page 15, Section 7.0, 1st paragraph: This sentence should be moved to the end of the second paragraph (on page 14), after the sentence that describes the exposure pathways for wildlife.	Section 7.0, the requested change will be made.
RCEU	EPA	Specific	S4.3	Vol 4	S4.3. Page 18, Section 7.3, 1st sentence: This sentence is not clear as written and should be revised as follows: "Subsurface soil sampling locations with a starting depth of 0.5 to 8 feet bgs..."	Section 7.3, the requested change will be made.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
RCEU	EPA	Specific	S4.4	Vol 4	S4.4. Page 21, Section 10.1, General Uncertainty Analysis: This section does not provide the introduction for the uncertainties section. Instead, the last three sentences of the preceding section replaced the expected text. This section should be revised accordingly (see Section 10.1 of the WAEU report for an example of the expected text).	Section 10.3 (formerly Section 10.1) General Uncertainty Analysis: This section will be completely revised and will reflect the concerns expressed in this comment.
RCEU	EPA	Specific	S4.5	Vol 4	S4.5. Attachment 1, Detection Limit Adequacy: The text and tables presented in this attachment are specific to the Upper Woman Drainage EU (Volume 10). This attachment should be replaced with an evaluation specific to the RCEU.	Attachment 1, Detection Limit Adequacy, will be completely revised and will be specific to RCEU.
RCEU	EPA	Specific	S4.6	Vol 4	S4.6. Attachment 3, Log-Probability Plots for Highly Censored Datasets: As noted in the general comments above, the use of a log-probability plot is of limited use for a data set that is highly censored. Currently, the method used to fit a probability plot to a censored data set is incorrect for molybdenum and tin. For these two metals, the probability plots are based on detects only (i.e., non-detects are not used in computing the z-score). This approach is not appropriate because the z-scores must be based on the entire data set. These probability plots should be revised to present z-scores calculated using all data and any log probability plot discussions should be revised accordingly.	Attachment 3, Section 4.0, Pattern Recognition for each analyte: The probability plots will be revised using all data and the discussion of the log probability plots will be revised accordingly.
RCEU	EPA	Specific	S4.7	Vol 4	S4.7. Attachment 3, Page 26, Manganese, Background Comparison, Non-PMJM: The text states that 2 of 51 detections were greater than the background MDC. However, According to Table A3.2.4, there were only 36 samples (not 51) which were analyzed for manganese. This paragraph should be reviewed for accuracy and corrected.	Attachment 3, Section 4.10 Manganese, Subsection 4.10.4 Comparison to RFETS Background and Other Background Data Sets, Surface Soil (Non-PMJM), 1st paragraph, the following sentence will be added: The range of concentrations of manganese in the RCEU and background samples overlap considerably with only three of the 36 RCEU concentrations greater than the background MDC.
RCEU	EPA	Specific	S4.8	Vol 4	S4.8. Attachment 3, Page 26, Manganese, Background Comparison, PMJM: The text states that 2 of 51 detections were greater than the background MDC. However, According to Table A3.2.6, there were only 19 samples (not 51) which were analyzed for manganese. This paragraph should be reviewed for accuracy and corrected.	Attachment 3, Section 4.10 Manganese, Subsection 4.10.4 Comparison to RFETS Background and Other Background Data Sets, Surface Soil (PMJM), 1st paragraph, the following sentence will be added: The range of concentrations of manganese in the RCEU and background samples overlap considerably with only two of the 19 RCEU concentrations greater than the background MDC.
RCEU	EPA	Specific	S4.9	Vol 4	S4.9. Attachment 3, Molybdenum and Tin, Background Comparison: These sections should reiterate that concentrations of these metals were all non-detect in the RFETS background data set; therefore, a statistical comparison to RFETS background was not performed.	Attachment 3, Section 4.11 Molybdenum and Section 4.14 Tin: the text will be revised as requested.
RCEU	EPA	Specific	S4.10	Vol 4	S4.10. Attachment 3, Table A3.2.4: This table includes two separate rows for manganese with different summary statistics. Verify which row presents the correct statistics and remove the incorrect row.	Attachment 3, Table A3.2.4: After the first listing for manganese, which is correct, the listed analyte names for the metals are wrong. They should be mercury, molybdenum, nickel, selenium, vanadium, tin, and zinc. The table will be corrected.
RCEU	EPA	Specific	S4.11	Vol 4	Specific Comments Identified Previously (June 2005) that Have Not Been Addressed S4.11. Section 7.1: Include a bullet that provides a summary by analysis group of surface soil samples in PMJM habitat.	A description of surface soil samples in PMJM will be added to the last paragraph of Section 7.1.
RCEU	EPA	Specific	S4.12	Vol 4	S4.12. Section 7.3.5, 1st sentence: The statement that RCEU surface soil data sets "have slightly elevated concentrations compared to the background data set..." is subjective and should be revised to "have concentrations that are statistically higher than background..."	Section 7.3.5, the requested change will be made to the text.
RCEU	EPA	Specific	S4.13	Vol 4	S4.13. Table 1.1: Because data adequacy is evaluated separately for each analysis group, the row for "Organics" should be split into the following analysis groups: SVOCs, VOCs, PCBs, Pesticides, Herbicides, Dioxins.	The purpose of Table 1.1 is to give the reader a general understanding of the number of inorganic, organic and radionuclide samples in each medium for a given EU. A more detailed breakdown on the organics is provided in subsequent Section 1 tables showing summary statistics. No change will be made to Table 1.1.

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RCEU	EPA	Specific	S4.14	Vol 4	S4.14. Table 7.16: The 2nd column header should be changed from "Exceed Any NOAEL ESL?" to "Exceeds Prairie Dog NOAEL ESL?"	Table 7.16, the requested change will be made to the table.
RCEU	EPA	Specific	S4.15	Vol 4	S4.15. Attachment 3, Bis(2-ethylhexyl)phthalate and Di-n-butylphthalate: EPA guidance states that results for common laboratory contaminants should be considered as positive results only if concentrations are above 10 times the maximum detected concentration levels in any blank. The Professional Judgment should be revised to discuss whether concentration levels of these two phthalates were higher than 10 times the values in the site and lab blanks.	Attachment 3: The two phthalates were not eliminated based on being common laboratory contaminants. No change will be made to the text.
IDEU	CDPHE	Specific	5.1	Vol 5	5.1. Executive summary - Please modify this section as per the above comment # 3.1.	Risk estimates will be added for the WRW and WRV for the IDEU (from the professional judgment evaluation). In addition, text will be added to clarify that potential risks are from exposure to arsenic.
IDEU	CDPHE	Specific	5.2	Vol 5	5.2. Executive Summary – Please note the following comments: (a) It is not appropriate to state that the ECOPC/receptor pairs were evaluated in the risk characterization using a range of EPCs, exposure scenarios, and toxicity reference values to give a range of risk estimates. This statement should be revised to clarify the use of default assumptions and alternate assumptions for the uncertainty analysis.	Executive Summary, 4th paragraph includes the following text: ECOPC/receptor pairs were evaluated in the risk characterization using default exposure and risk assumptions as defined in the Comprehensive Risk Assessment (CRA) Methodology (DOE 2005). In addition, a refinement of the exposure and risk models based on chemical-specific uncertainties associated with the initial default exposure models were completed and provide a refined estimate of potential risk.
IDEU	CDPHE	Specific	5.2	Vol 5	(b) It is not appropriate to conclude that overall risks were classified as "low" for all non-PMJM ECOPC/receptor pairs. This statement should be revised to indicate "low to potentially significant risks" based on different receptors and ECOPCs as per Table 10.1 on interpretation of HQs. For details, please see comments noted below.	Per the consultative process, the RFCA Parties agree to use the following text in the Executive Summary and in Section 11.3: Based on default calculations, site-related risks are likely to be low to moderate for the ecological receptors evaluated in the IDEU.
IDEU	CDPHE	Specific	5.3	Vol 5	5.3. Section 10.1.1. Risk characterization – Antimony – It is important to include the magnitude of NOAEL HQ in this discussion. Additionally, the information regarding the selection of antimony as a COC for the HHRA is not relevant here.	Section 10.1.1 Antimony, Risk Description: The magnitude of the NOAEL HQs are clearly presented in Table 10.1 that accompanies Section 10. The text provides a summary of the more detailed information found in this table and therefore, does not include specific values for all calculations included in the risk characterization. No changes will be made to the text.  Section 10.1.1 Antimony, Risk Description, the following sentence will be deleted: At the largest IHSS, the West Spray Field, antimony was not identified as a COC for human receptors.
IDEU	CDPHE	Specific	5.4	Vol 5	5.4. Section 10.1.2. Risk characterization – Lead- Small Home Range Receptors – Please note the following comments on this section:	No response necessary.
IDEU	CDPHE	Specific	5.4	Vol 5	(a) Please eliminate the statement that lead was not selected as a COC for human receptors. This is not relevant.	Section 10.1.2 Lead, Lead Risk Description, the following sentence will be deleted: At the largest IHSS, the West Spray Field, lead was not identified as a COC for human receptors.
IDEU	CDPHE	Specific	5.4	Vol 5	(b) It is important to include the magnitude of NOAEL HQ in the risk description.	Section 10.1.2 Risk Description Lead, The magnitude of the NOAEL HQs are clearly presented in Table 10.1 that accompanies Section 10. The text provides a summary of the more detailed information found in this table and therefore, does not include specific values for all calculations included in the risk characterization. No changes will be made to the text.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
IDEU	CDPHE	Specific	5.4	Vol 5	(c) It appears that only 2 percent of default LOAEL HQs greater than 5 for mourning dove (insectivore) are classified as "potentially significant risk", whereas, 92 percent of default LOAEL HQs > 1 for mourning dove (insectivore) are not classified as "potentially significant risk". Please revise these conclusions on the classification of risk categories in accordance with Table 10.1 on the interpretation of HQs.	Section 10.1.2 Lead, Non-PMJM Receptors - Small Home Range: Using the default exposure and TRV models indicates potentially significant risk to the mourning dove from lead. That information is presented and discussed in the risk characterization. However, the Tier 2 UTL is lower than the site-specific background UTL. Per the CRA Methodology, the exposure point concentration to be utilized for the small home range receptor is the UTL. It is this EPC that is used for conclusions. The text correctly indicates that site-related risk is low since it is lower than background risk and background concentrations do not appear to be elevated. The text will be re-worded for clarity.
IDEU	CDPHE	Specific	5.4	Vol 5	(d) It is not appropriate to conclude that risks may be over predicted using the default HQs based on a comparison to background risks. It is important to note that site-specific concentrations are statistically higher than background concentrations for lead.	Section 10.1.2 Lead, Text that states risks may be overpredicted based on comparison to background will be deleted. Text will be added to note that IDEU concentrations of lead are statistically greater than background.
IDEU	CDPHE	Specific	5.5	Vol 5	5.5. Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.3.1 Uncertainties Associated with Data Adequacy and Quality, will provide a brief summary and refer back to Section 1.2 for detailed information.  Section 10.3.3. Uncertainties Associated with Eliminating of Ecological Contaminants of Interest Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say "unlikely to result in risk concerns for ecological receptors and are well within regional background levels."  Section 10.4 Summary of Significant Sources of Uncertainty, the following text will be added: While some of the general sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.
IDEU	CDPHE	Specific	5.6	Vol 5	5.6. Section 11.2- Summary and Conclusions – The overall conclusions are too broad to capture the full extent of potential risks based on default HQs and uncertainty analysis HQs. Please revise this section to conclude low to potentially significant risks in accordance with the above comment # 5.4.	Note: Section 11.2 became Section 11.3. Section 11.3 Summary and Conclusions for Ecological Risk: This section will be revised to provide more detail on the results of the risk characterization. In particular, ECOPC/receptor pairs that had LOAEL HQs greater than 1 using the default assumptions are discussed in more detail in the revised conclusions. It is also concluded: Based on default calculations, site-related risks are likely to be low to moderate for the ecological receptors evaluated in the IDEU.
IDEU	CDPHE	Specific	5.7	Vol 5	Attachment 3: 5.7. Section 4.0- Professional Judgment - Background Comparisons – Please revise background comparison discussions in accordance with the above comment # 4.5.	Attachment 3, Section 4.0 Professional Judgment: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
IDEU	CDPHE	Specific	5.8	Vol 5	5.8. Section 4.0- Professional Judgment evaluation – Evaluation of ECOIs – Please note the following comments:	No response necessary.
IDEU	CDPHE	Specific	5.8	Vol 5	(a) Based on the professional judgment evaluation using spatial trends, process knowledge, statistical background comparisons, and log-probability plots, several chemicals should be carried forward into the risk characterization step (e.g., arsenic, tin, aluminum, chromium).	Attachment 3, Section 4.0: No additional ECOPCs will be added to the IDEU per the agency meeting on 4/12/06.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
IDEU	CDPHE	Specific	5.8	Vol 5	(b) Log-probability plots are given too much weight and the limited power of this approach to detect the occurrence of two populations is not taken into consideration. Please note that the statistical comparison to the RFETS background provides the highest weight-of-evidence.	The log-probability plots are only one line of evidence and are not given any additional weight relative to other lines of evidence. Text related to probability plots will be reviewed and revised if appropriate for accuracy.
IDEU	EPA	Specific	S5.1	Vol 5	SPECIFIC COMMENTS FOR VOLUME 5, INTER-DRAINAGE EU S5.1. Page 4, Section 1.1.4, PMJM Habitat, 1st paragraph: This paragraph asserts that "no PMJM have ever been captured in the IDEU". However, Section 10.2 (page 29, 2nd full paragraph) states that small mammal trapping has not occurred in the IDEU. If PMJM trapping has not occurred within the IDEU, this statement is misleading and should be removed.	Section 1.1.4, PMJM Habitat within Inter-Drainage Exposure Unit, 1st paragraph, the following sentence will be deleted: No PMJM have ever been captured in the IDEU.
IDEU	EPA	Specific	S5.2	Vol 5	S5.2. Page 5, Data Adequacy for Organics in Surface Soil: According to Section 1.1.5, there are only 3 surface soil samples in the IDEU that have been analyzed for organics. According to CRA Volume 2, "with the exception of the roadway spray areas, [IDEU] IHSSs are not expected to be sources of organic contamination". Oils used to spray roadways may have been contaminated with polynuclear aromatic hydrocarbons (PAHs). However, CRA Volume 2 concludes that the existing data set is adequate for use in characterizing ecological risks because "2 of the 3 samples for SVOC analysis are near the road, and PAHs were not detected". However, review of Attachment 1 in the IDEU volume (which provides a detection limit adequacy evaluation of non-detects) shows that most PAHs (e.g., benzo(a)pyrene, fluorene, chrysene, etc.) were not analyzed in surface soil. Therefore, this line of evidence cannot be used to support the conclusion that the existing data set is adequate. CRA Volume 2 and Section 1.2 of the IDEU volume should be revised to address this data gap and discuss how this may influence potential ecological risks.	CRA Volume 2 and Section 1.2 of the IDEU will be revised to note that naphthalene is the only PAH analyzer in IDEU surface soil samples and it was not detected. It will also be revised to note that for UWOEU and LWOEU, all PAHs were analyzed in surface soil samples collected near the road, and PAHs were not detected.
IDEU	EPA	Specific	S5.3	Vol 5	S5.3. Page 5, PMJM Surface Soil Samples and Locations: The number of surface soil samples in PMJM habitat presented in Table 1.2, Table 1.6 and Figure 1.5 are inconsistent. Table 1.2 shows only one sample (analyzed for radionuclides) in PMJM habitat. Table 1.6 shows up to 7 samples for metals and up to 4 samples for radionuclides in PMJM habitat. Figure 1.5 shows a total of 8 sampling locations in PMJM habitat. In addition, these EU tables and figures are also inconsistent with the data description presented in CRA Volume 2, which identifies a total of 4 samples for habitat patch #9 and a total of 3 samples for habitat patch #31. The text, tables, and figures in the IDEU volume and CRA Volume 2 should be revised to present consistent information on the number and types of samples in IDEU PMJM habitat areas.	Section 1.1.5 Data Description: The number of sample locations in the text will be revised to match Figure 1.5. In addition, a footnote will be added to Table 1.2
IDEU	EPA	Specific	S5.4	Vol 5	S5.4. Page 25, Section 10.1.1, Antimony, Risk Description, last sentence: The fact that antimony was not identified as a COC for human receptors at the West Spray Field has no relevance to potential ecological risks. This sentence should be removed.	Section 10.1.1 Antimony, Risk Description, the following sentence will be deleted: At the largest IHSS, the West Spray Field, lead was not identified as a COC for human receptors.
IDEU	EPA	Specific	S5.5	Vol 5	S5.5. Page 26, Section 10.1.2, Lead, Risk Description, last sentence: The fact that lead was not identified as a COC for human receptors at the West Spray Field has no relevance to potential ecological risks. This sentence should be removed.	Section 10.1.2 Lead, Risk Description, the following sentence will be deleted: At the largest IHSS, the West Spray Field, lead was not identified as a COC for human receptors.
IDEU	EPA	Specific	S5.6	Vol 5	S5.6. Page 31, Section 11.2: This section does not summarize the results of the PMJM ECOPC selection process. The 4th sentence should be revised as follows: "No ECOPCs were identified for PMJM receptors for surface soil or for burrowing mammals from subsurface soil."	Note Section 11.2 is now Section 11.3 Section 11.3 Ecological Risk will be re-written to summarize the PMJM ECOPC selection process.
IDEU	EPA	Specific	S5.7	Vol 5	S5.7. Table 1.6: This table should be revised to include the missing column for Analyte Name.	Table 1.6 will be revised to include a column for Analyte Name.

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IDEU	EPA	Specific	S5.8	Vol 5	S5.8. Table 10.1: The following footnote should be added to this table: "Shaded cells designate HQs which were calculated using default BAFs and default TRVs as provided in the CRA Methodology."	Table 10.1, the following notes will be added: Shaded cells designate HQs which were calculated using default BAFs and default TRVs and provided in the CRA Methodology (DOE 2005). All HQ calculations are provided in Attachment 4. Discussion of this chemical-specific uncertainties are provided in Attachment 5.
IDEU	EPA	Specific	S5.9	Vol 5	S5.9. Attachment 3, Pages 12 and 18, Boron and Tin, Background Comparison: These sections should reiterate that concentrations of these metals were either not analyzed or were all non-detect in the RFETS background data set; therefore, a statistical comparison to RFETS background was not performed.	Attachment 3, Section 4.4 Boron and Section 4.8 Tin, the following sentences will be added to each section, respectively: For boron in surface soil, a statistical comparison between IDEU and RFETS background data could not be performed because RFETS background surface soil samples were not analyzed for boron. For tin in surface soil, a statistical comparison between IDEU and RFETS background data could not be performed because tin was not detected in RFETS background surface soil samples.
IDEU	EPA	Specific	S5.10	Vol 5	S5.10. Attachment 3, Page 8, Aluminum, Pattern Recognition: This section suggests that the 3 "anomalously high concentration samples" are due to soil samples with a higher clay content. However, no evidence is presented to support this claim. An alternative interpretation is that these 3 samples are indicative of site-related contamination in the IDEU (since aluminum was present in waste at RFETS). This section should be revised to present a more balanced discussion of the possible reasons for the observed data pattern and the interpretation of the meaning of the log probability plot for aluminum.	Attachment 3, Section 4.1.3 Pattern Recognition, the following text will be added: Because the spatial trend analysis indicates that aluminum concentrations in IDEU surface soil reflect variations in naturally occurring aluminum, and the IDEU concentrations are similar to RFETS background levels and are well within regional background levels (see Section 4.1.4), the three samples may simply have a higher clay content than those representing the background population (Figure A3.4.1).
IDEU	EPA	Specific	S5.11	Vol 5	S5.11. Attachment 3, Page 11, Arsenic, Pattern Recognition, Non-PMJM: The text cites a table that identifies the four anomalously high samples from the log probability plot. However, no table is shown. This section should be revised to include a list of these four samples along with their reported arsenic concentrations. Note: When identifying these sample locations, ensure that the sample identifiers match those presented in Figure 1.6 in the main text.	Attachment 3, Section 4.3.3 Pattern Recognition, Surface Soil (Non-PMJM): The text will be revised to simply state that the probability plot does not suggest a single background population.
IDEU	EPA	Specific	S5.12	Vol 5	S5.12. Attachment 3, Page 11, Arsenic, Risk Potential, Non-PMJM: The text states that "ESLs for deer mouse herbivore and prairie dog are less than the MDC for background" and concludes that "these ESLs may be overly conservative". However, as discussed in the General Comments above, the best way to compare an ESL with background is to describe the fraction of all background samples that are above the ESL, rather than focusing on the MDC. In this case, the prairie dog ESL (9.35 mg/kg) is higher than 19 of 20 (95%) background samples, and so is near the high end of the background range. In addition, as indicated in the General Comments, just because an ESL falls within the background range does not necessarily impugn the ESL. Finally, whether or not the ESLs for the deer mouse and prairie dog are or are not overly conservative, the same evaluation is needed for plants, where the ESL (10 mg/kg) is not within the background range.	Attachment 3, Section 4.3.6 Risk Potential for Plants and Wildlife, Surface Soil (Non-PMJM), the following text will be rewritten as follows: However, the UTL and the MDC (17 mg/kg) are less than the Eco-SSL for plants (18 mg/kg), birds (43 mg/kg) and mammals (46 mg/kg) (EPA 2005a). In addition, arsenic concentrations in IDEU surface soil have a similar range as the background concentrations and are most likely due to local variations in natural sources.  The following sentence will be deleted from this paragraph: Because risks are not typically expected at background concentrations, these ESLs may be overly conservative, and arsenic is unlikely to result in risk concerns for wildlife populations in excess of those likely to be found in background areas.
IDEU	EPA	Specific	S5.13	Vol 5	S5.13. Attachment 3, Page 12, Arsenic, Conclusion: Based on the lines of evidence presented for arsenic, it is not agreed that arsenic is not an ECOPC for the IDEU. The process knowledge indicates that arsenic may be a contaminant of potential concern in the NNEU adjacent to the IDEU, the spatial trend evaluation shows that arsenic concentrations generally tend to be highest in site-impacted areas relative to remote areas, the log probability plot shows several values outside of the expected population, EU soils are statistically higher than background, and a comparison of ESLs to RFETS background does not indicate that ESLs are overly conservative. The text should be revised to retain arsenic as an ECOPC for the IDEU and present a more balanced summary of the weight of evidence.	No additional ECOPCs will be added to the IDEU per the agency meeting on 4/12/06.
IDEU	EPA	Specific	S5.14	Vol 5	S5.14. Attachment 3, Page 14, Chromium, Pattern Recognition: This section suggests that the second population of higher chromium concentrations is due to soil samples with a higher clay content. However, no evidence is presented to support this claim. An example of an alternative interpretation could be that this second population is indicative of site-related contamination in the IDEU (since chromium was present in waste at RFETS). This section should be revised to present a more balanced discussion of the possible reasons for the observed data pattern and the interpretation of the meaning of the log probability plot for chromium.	Attachment 3, Section 4.5.3. Chromium Pattern Recognition, the following text will be added: The probability plot for chromium indicates two populations: an apparent background population ranging from 9.3 to 12.7 mg/kg, and a second population ranging from 13.1 to 26 mg/kg. However, the IDEU concentration range is similar to RFETS background levels.
IDEU	EPA	Specific	S5.15	Vol 5	S5.15. Attachment 3, Page 18, Tin, Conclusion: Based on the lines of evidence presented for tin, it is not agreed that tin concentrations are "representative of naturally occurring conditions". The process knowledge indicates that tin may be a contaminant of potential concern at the RFETS site, the spatial trend evaluation shows that tin concentrations are highest in site-impacted areas relative to remote areas, the log probability plot is inconclusive, EU soils are statistically higher than	No additional ECOPCs will be added to the IDEU per the agency meeting on 4/12/06.

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					background, and the ESLs for tin do not appear to be overly conservative based on a comparison to background. The statement that tin concentrations in the IDEU are naturally occurring should be removed, and the text should be revised to retain tin as an ECOPC for the IDEU and to present a more balanced summary of the weight of evidence.	
IDEU	EPA	Specific	S5.16	Vol 5	S5.16. Attachment 5, Page 3, Lead, Background Risks: The text concludes that the "background risk assessment results indicate potentially significant risks in uncontaminated soils...[which] may be indicative of exposure models and/or TRVs that may be overly conservative". However, "background" is not necessarily the same as "uncontaminated". Therefore, this sentence should be revised as follows: "background risk assessment results also indicate potentially significant risks in background soils..."	Attachment 5, Section 1.2 will be rewritten to address background risk assessment results.
IDEU	EPA	Specific	S5.17	Vol 5	Specific Comments Identified Previously (June 6, 2005) that Have Not Been Addressed S5.17. Table 1.1: This table should be revised to include a column that identifies the chemicals of potential concern identified for each IHSS.	Chemicals of potential concern based on previous investigations are identified in the FY2005 Final Historical Release Report, Appendix B to the RI/FS report. No changes will be made to the table.
NNEU	CDPHE	Specific	6.1	Vol 6	6.1. Executive Summary – Results of risk characterization are inconsistent with the pre-draft report. For example, in the pre-draft NNEU report, the HHRA risk characterization results estimated HQ of 0.7 (vs. 0.1 in the draft report) for the WRW based on the Tier-I EPC.	The HQ for vanadium in the Draft CRA is different than the pre-draft HQ because additional removal of soil in the NNEU was conducted after the pre-draft CRA was prepared. The HQ in the Draft CRA represents post-accelerated action conditions. No changes will be made to the text.
NNEU	CDPHE	Specific	6.2	Vol 6	6.2. Section 5.2.1 – Risk Characterization Results – As noted in the above comment #6.1, results of risk characterization for the WRW and WRV are inconsistent with the pre-draft report. These differences are due to the Tier I and Tier II EPC values. For example, the Tier I and Tier II EPCs in the draft report are 165 mg/kg (vs. 735 mg/kg in the pre-draft report) and 44.8 mg/kg (vs. 79.2 mg/kg in the pre-draft), respectively. Please provide reasons for this difference.	The results of risk characterization for the WRW and WRV in the Draft CRA are different than the pre-draft results because additional removal of soil in the NNEU was conducted after the pre-draft CRA was prepared. The results of risk characterization for the WRW and WRV in the Draft CRA represents post-accelerated action conditions. No changes will be made to the text.
NNEU	CDPHE	Specific	6.3	Vol 6	Ecological Risk Assessment: 6.3. Executive Summary – Please note the following comments: (a) It is not appropriate to state that the ECOPC/receptor pairs were evaluated in the risk characterization using a range of EPCs, exposure scenarios, and toxicity reference values to give a range of risk estimates. This statement should be revised to clarify the use of default assumptions and alternate assumptions for the uncertainty analysis.	Executive Summary, 5th paragraph includes the following text: ECOPC/receptor pairs were evaluated in the risk characterization using default exposure and risk assumptions as defined in the Comprehensive Risk Assessment (CRA) Methodology (DOE 2005). In addition, a refinement of the exposure and risk models based on chemical-specific uncertainties associated with the initial default exposure models were completed for several ECOPC/receptor pairs to provide a refined estimate of potential risk.
NNEU	CDPHE	Specific	6.3	Vol 6	(b) It is not appropriate to conclude, "overall, no significant risks to wildlife receptors that may use the NNEU are predicted." This statement should be revised to indicate "low to potentially significant risks" based on different receptors and ECOPCs as per table in Section 10.1 on interpretation of HQs. For details, please see comments noted below.	Per the consultative process, the RFCA Parties agree to use the following text in the Executive Summary and in Section 11.3: Based on default and refined calculations, site-related risks are likely to be low to moderate with some high levels of uncertainty for the ecological receptors evaluated in the NNEU.
NNEU	CDPHE	Specific	6.4	Vol 6	6.4. Section 10.1. Chemical Risk Characterization – Please note the following comments on risk characterization for nickel and di-n-butyl phthalate: (a) It is important to include magnitude of NOAEL HQs in the risk description.	The magnitude of the NOAEL HQs are clearly presented in Table 10.1 that accompanies Section 10. The text provides a summary of the more detailed information found in this table and therefore, does not include specific values for all calculations included in the risk characterization. No changes will be made to the text.
NNEU	CDPHE	Specific	6.4	Vol 6	(b) Table 10.3 shows that 100 percent LOAEL HQs are >1 and < 5 for the deer mice (insectivore) for nickel, and 86 percent LOAEL HQs are >1 and < 5 for mourning dove (insectivore) for di-n-butyl phthalate. Additionally, the highest HQ for the uncertainty analysis equaled 2. Therefore, it is not appropriate to conclude that overall risks are potentially low. These risks should be classified as potentially significant in accordance with the guidelines for the interpretation of HQs provided in Section 10.1; which justifies the overall risk conclusions to be classified as "low to potentially significant".	The revised risk characterization for nickel and di-n-butylphthalate clearly indicates that there are considerable uncertainties related to both risk models. For nickel, recalculation of HQs using additional TRVs were less than 1. In addition, potentially significant risks are calculated at 19 of 20 samples in the background dataset which appears to be in the range of expected background concentrations. Calculation of HQs in background (UTL) and using the Tier 2 UTL result in the same HQ (HQ = 3) as with the NNEU data set. For di-n-butylphthalate, the LOAEL HQ was equal to 2 using the Tier 1 EPC. the LOAEL using the Tier 2 EPC was equal to 1. Although there are no refined risk calculations, other lines of evidence indicate a possibility for overestimation of risk. In addition, there is also no known source of di-n-butylphthalate within the NNEU. The revised discussion will be presented in Section 10.1 for each chemical as well as



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						in the overall conclusions in Section 11.3.
NNEU	CDPHE	Specific	6.5	Vol 6	6.5. Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	<p>Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.1.1 Uncertainty Associated with Data Adequacy and Data Quality, will provide a brief summary and refer back to Section 1.2 for detailed information.</p> <p>Section 10.3.3. Uncertainty Associated with Elimination of ECOIs Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say "unlikely to result in risk concerns for ecological receptors".</p> <p>Section 10.4 Summary of Significant Sources of Uncertainty, the following text will be added: "While some of the general sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization."</p>
NNEU	CDPHE	Specific	6.6	Vol 6	6.6. Section 11.2- Summary and Conclusions – The overall conclusions are too broad to capture the full extent of potential risks based on default HQs and uncertainty analysis HQs. Please revise this section to conclude low to potentially significant risks in accordance with the above noted comment # 6.4.	Section 11.3 (used to be 11.2) will be revised to provide more detail on the results of the risk characterization. In particular, ECOPC/receptor pairs that had LOAEL HQs greater than 1 using the default assumptions are discussed in more detail in the revised conclusions.
NNEU	CDPHE	Specific	6.7	Vol 6	Attachment 3 6.7. Section 4.0- Professional Judgment - Background Comparisons – Please revise background comparison discussions in accordance with the above noted comment # 4.5.	Attachment 3, Section 4.0 Professional Judgment: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
NNEU	EPA	Specific	S6.1	Vol 6	SPECIFIC COMMENTS FOR VOLUME 6, NO NAME GULCH EUS6.1. Page 37, Section 10.1.6, Nickel, Non-PMJM, 3rd paragraph: The text states that "LOAEL HQs in background...are the same as those calculated for NNEU surface soils..." and that default HQs are "not different from those predicted at background concentrations". However, nickel concentrations in the NNEU were determined to be statistically higher than the RFETS background and a review of the box plot for nickel (presented in Attachment 3) shows that, while the distributions overlap, the NNEU data set contains several samples that are clearly shifted above the RFETS background data set. Therefore, it is not appropriate to make statements to the effect that the two datasets are equal (i.e., "the same", "not different"), and this paragraph should be revised accordingly.	The text in Section 10.1.6, Non-PMJM Receptors 3rd paragraph will be revised to state that the HQs for NNEU and background are "similar" rather than the "same".
NNEU	EPA	Specific	S6.2	Vol 6	S6.2. Attachment 1, Page 2, Detection Limit Adequacy, Section 1.2: This section compares detection limits to ecological screening levels (ESLs) not human health preliminary remediation goals (PRGs). Therefore, section text should be revised to refer to ESLs not PRGs.	Attachment 1, Section 1.2: The text will be corrected as suggested in this comment.
NNEU	EPA	Specific	S6.3	Vol 6	S6.3. Attachment 3, Page 13, Boron, Background Comparison: This section should reiterate that concentrations of boron were not analyzed in the RFETS background data set; therefore, a statistical comparison to RFETS background was not performed.	Attachment 3, Section 4.5.4 Comparison to RFETS Background and Other Background Data Sets, a new sentence will be added as follows: For boron in surface soil, a statistical comparison between NNEU and RFETS background data could not be performed because RFETS background surface soil samples were not analyzed for boron.



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NNEU	EPA	Specific	S6.4	Vol 6	S6.4. Attachment 3, Page 19, Section 4.13, Total PCBs, Process Knowledge: This section states that there are "no documented historical source areas present in the NNEU, and no documented operations or activities that occurred in NNEU involving the use of PCBs". However, Table 1.1 in the main text shows that IHSS 203 (Inactive Hazardous Waste Storage Area) stored PCB-contaminated soil, debris, and oil. This section should be revised to address the potential sources of PCB contamination in the NNEU as indicated in Table 1.1.	Attachment 3, Section 4.13.1 Summary of Process Knowledge, the following sentences will be added: However, PCBs were a constituent in oil used in transformers at RFETS, and PCB-contaminated soil, debris and PCB-contaminated oil were stored at IHSS NW-203, the Inactive Hazardous Waste Storage Area. Therefore, there is a potential for PCBs to be present in surface soil in a portion of the NNEU as a result of historical site-related activities.
NNEU	EPA	Specific	S6.5	Vol 6	Specific Comments Identified Previously (September 26, 2005) that Have Not Been Addressed S6.5. Qualitative Evaluation of Unmeasured Analytes: The risk assessment does not provide a discussion of potential risks from chemicals for which there are no applicable data for a specified medium within a specified AEU/EU. For example, there are no organic surface soil data within PMJM habitat areas in NNEU. It is important for the risk assessment to address these chemicals and/or analyte groups, even if the potential risks are only evaluated qualitatively. The risk characterization summary should be revised to include the following: · A list of those chemicals and/or analyte groups where measured data are not available. · A summary of the lines of evidence used to conclude that risks from these chemical are likely to be absent or low. In many cases, these lines of evidence will have already been presented in the Data Adequacy Report (CRA Volume 2). For example, this type of summary might resemble the following text (based on the situation in NNEU): "As noted above, there are no organic data for NNEU surface soils from within PMJM habitat areas. As presented in the DAR, the dominant contaminant migration pathway by which organics from the IA might have reached the NNEU is runoff into and transport via No Name Gulch. However, organic chemicals in No Name Gulch sediments are primarily non-detect or at concentrations less than sediment ESLs. In addition, based on data from non-PMJM habitat, only three organics were identified as surface soil ECOPCs, and in all cases the concentrations were not above a level of concern to mammals as indicated by the insectivorous deer mouse (which is protective of PMJM). Based on this information, it is concluded that risks to PMJM are likely to be negligible, and absence of organic data in PMJM habitat is not a significant source of uncertainty."	Section 1.2 will be expanded to address data limitations in more detail. The risk characterization summaries will be revised to provide lines of evidence for analyte groups where measured data are not available.
NNEU	EPA	Specific	S6.6	Vol 6	S6.6. Section 7.1: Include two new bullets to describe the surface soil data set from PMJM habitat areas and the surface water data set (utilized in the wildlife ingestion calculations).	Section 7.1 Data Used in the Ecological Risk Assessment: The text will be expanded to include more detail on the PMJM data set as well as the surface water dataset used in the wildlife ingestion calculations.
NNEU	EPA	Specific	S6.7	Vol 6	S6.7. Section 10.1.8, Vanadium: The following sentence should be added to support the conclusion that risks from vanadium are likely to be low for PMJM: "This conclusion is supported by the fact that the MDC in PMJM habitat (42.1 mg/kg) is less than the vanadium Eco-SSL for mammals (280 mg/kg) (USEPA 2005[1])".	Section 10.1.8 Vanadium, PMJM Receptors, 2nd paragraph, the following sentence will be added: This conclusion is supported by the fact that the MDC in PMJM habitat (42.1 mg/kg) is less than the vanadium Eco-SSL for mammals (280 mg/kg) (EPA 2005).
NNEU	EPA	Specific	S6.8	Vol 6	S6.8. Table 1.2: Revise this table to include the samples added to the PMJM data set from the buffer areas surrounding patch #11.	Table 1.2 provides summary statistics for samples that were collected in the NNEU PMJM habitat. A footnote will be added to Table 1.2 indicating additional surface soil data for samples outside but in the vicinity of the PMJM habitat have been included in the PMJM data set.
NNEU	EPA	Specific	S6.9	Vol 6	S6.9. Figure 1.2: The figure is missing several of the PACs that are included on Table 1.1. Please add NW-1400 and NW1501 (Tear Gas Powder Release site and Asbestos Release at PU&D Yard, respectively). [The IHSS names have all been removed from the current version of this figure. Without the names, we cannot assess the likelihood that the observation of a chemical and or risk may be from a source.]	The color of the contour lines will be changed on Figure 1.2 so that the historical IHSSs are more clearly defined. All historical buffer zone IHSSs are delineated and labeled in Appendix A, Volume 2, Figure 1.2 of the RI/FS report.

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NNEU	EPA	Specific	S6.10	Vol 6	S6.10. Attachment 3, Boron, Probability Plots: As noted previously, log-probability plots have low power to detect multiple distributions in a data set. Moreover, in this particular example, it is not entirely clear that the data can be interpreted as being continuous, since it is not hard to envision a possible discontinuity near a z-score of 0. The text should be modified to indicate that the log probability plot is consistent with the hypothesis that there is only one population of data, but that data are too limited to draw a reliable conclusion.	Attachment 3, Section 4.5.3. Pattern Recognition, Surface Soil (Non-PMJM), the following sentence will be added: The probability plot for boron is consistent with the hypothesis that there is only one population of data, but that data are too limited to draw a reliable conclusion (Figure A3.4.3).
UWNEU	CDPHE	Specific	7.1	Vol 7	7.1. Executive Summary – Please note the following comments: (a) It is not appropriate to state that the ECOPC/receptor pairs were evaluated in the risk characterization using a range of EPCs, exposure scenarios, and toxicity reference values to give a range of risk estimates. This statement should be revised to clarify the use of default assumptions and alternate assumptions for the uncertainty analysis.	Executive Summary, 5th paragraph includes the following text: ECOPC/receptor pairs were evaluated in the risk characterization using default exposure and risk assumptions as defined in the Comprehensive Risk Assessment (CRA) Methodology (DOE 2005). In addition, a refinement of the exposure and risk models based on chemical-specific uncertainties associated with the initial default exposure models were completed for several ECOPC/receptor pairs to provide a refined estimate of potential risk.
UWNEU	CDPHE	Specific	7.1	Vol 7	(b) It is not appropriate to conclude that overall, no significant risks to wildlife receptors that may use the UWNEU are predicted. This statement should be revised to indicate "low to potentially significant risks" based on different receptors and ECOPCs as per table in Section 10.1 on interpretation of HQs. For example, risks to PMJM receptors from antimony should clearly be classified as potentially significant (vs. low to moderate stated in the report).	Per the consultative process, the RFCA Parties agree to use the following text in the Executive Summary and in Section 11.3: Based on default and refined calculations, site-related risks are likely to be low to moderate with some high levels of uncertainty for the ecological receptors evaluated in the UWNEU.
UWNEU	CDPHE	Specific	7.2	Vol 7	7.2. Section 10.1- Chemical Risk Characterization- Please note the following comments on risk characterization for antimony, nickel, and di-n-butylphthalate:	No response necessary.
UWNEU	CDPHE	Specific	7.2	Vol 7	(a) Risk to the PMJM receptors from antimony should specify that no alternative HQs based on LOAEL are calculated in Table 10.2. Additionally, risks in patch 17 and 18 should be classified as potentially significant (vs. likely to be low stated in the text).	There is a high level of uncertainty associated with the use of the default upper-bound BAF and the default TRV in the risk calculations for antimony. Additional BAFs or TRVs for antimony are unavailable for a refined analysis. The conclusions in the revised text state that given that the LOAEL HQ = 2, risk to PMJM receptors is likely to be low.
UWNEU	CDPHE	Specific	7.2	Vol 7	(b) It is important to classify risk to the PMJM receptors from nickel as potentially significant. It is not appropriate to downplay site-specific risks based on a comparison to background risks when the site-specific concentrations are statistically higher than background concentrations for nickel.	No LOAEL HQs are greater than 1 using the median BAF and/or the default TRVs. Median BAFs are used in Eco-SSL calculations and are also appropriate here. Potentially significant risks are only predicted using the default (screening level) assumptions. In addition, background LOAEL HQs equal 2 for the PMJM. LOAEL HQs equal 3 in all patches under the most conservative set of assumptions. The text will state that potential for adverse effects is low.
UWNEU	CDPHE	Specific	7.2	Vol 7	(c) Risk to the deer mouse (insectivore) from nickel should be classified as potentially significant (vs. likely to be low) based on 100 percent of LOAEL HQs between 1 and 5 (Table 10.3). Alternatively, risks can be classified as low to potentially significant based on HQs using the default and alternative assumptions.	Risks are classified as potentially significant based on the default assumptions. The overall conclusion of low risk is based on the refined analysis using best-available data that includes the model parameters that are less uncertain and more realistic than the default parameters. The text will state that the potential for adverse effects is low.
UWNEU	CDPHE	Specific	7.2	Vol 7	(d) Risk to the mourning dove (insectivore from di-n-butylphthalate should be classified as potentially significant (vs. likely low stated in the text ) based on 100 percent LOAEL HQs between 1 and 5 (Table 10.3) using the default assumptions and the highest LOAEL HQ equalled 2 using the alternative assumptions for the uncertainty analysis.	There are no alternative HQs calculated for di-n-butyl phthalate. The LOAEL HQs =2 are for Tier 2 EPCs. When viewed in context with the uncertainty inherent in the risk model for di-n-butylphthalate (uncertainty analysis) the HQs do not indicate potentially significant risks. The text indicates that there is no known source, soil-to-earthworm bioaccumulation models are highly conservative, and the maximum HQ = 2. These lines of evidence indicate that risks are likely to be low. Therefore, no changes will be made to conclusions for this ECOPC.
UWNEU	CDPHE	Specific	7.3	Vol 7	7.3. Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.3.1 Uncertainties Associated with Data Adequacy and Quality, will provide a brief summary and refer back to Section 1.2 for detailed information.  Section 10.3.3. Uncertainties Associated with Eliminating of Ecological Contaminants of Interest Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say 'unlikely to result in risk concerns for ecological receptors and are well within regional background

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
						levels.” Section 10.4 Summary of Significant Sources of Uncertainty, the following text will be added: While some of the general sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.
UWNEU	CDPHE	Specific	7.4	Vol 7	7.4. Section 11.2- Summary and Conclusions – The overall conclusions are too broad to capture the full extent of potential risks based on default HQs and uncertainty analysis HQs. Please revise this section to conclude low to potentially significant risks (vs. no significant risks stated in the text) as well as to include risks to other receptors and from additional chemicals as noted in the above comment # 7.2.	Note: Section 11.2 became Section 11.3. Section 11.3 Summary and Conclusions for Ecological Risk: This section will be revised to provide more detail on the results of the risk characterization. In particular, ECOPC/receptor pairs that had LOAEL HQs greater than 1 using the default assumptions are discussed in more detail in the revised conclusions.
UWNEU	CDPHE	Specific	7.5	Vol 7	Attachment 3:7.5. Section 4.0 - Professional Judgment - Background Comparisons – Please revise background comparison discussions in accordance with the above comment # 4.5.	Attachment 3, Section 4.0 Professional Judgment: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
UWNEU	CDPHE	Specific	7.6	Vol 7	7.6. Section 4.0- Professional Judgment evaluation – Elimination of ECOIs as ECOPCs – Please note the following comments: (a) Based on the professional judgment evaluation using spatial trends, process knowledge, statistical background comparisons, and log-probability plots, selenium should be carried forward into the risk characterization step.	Attachment 3, Section 4.0 Professional Judgment: No additional ECOPCs will be added to the UWNEU per the agency meeting on 4/12/06.
UWNEU	CDPHE	Specific	7.6	Vol 7	(b) Log-probability plots are given too much weight and the limited power of this approach to detect the occurrence of two populations is not taken into consideration. Please note that the statistical comparison to the RFETS background provides the highest weight-of-evidence.	The log-probability plots are only one line of evidence and are not given any additional weight relative to other lines of evidence. Text related to probability plots will be reviewed and revised if appropriate for accuracy.
UWNEU	CDPHE	Specific	7.7	Vol 7	Attachment 5 7.7 Section 1.1 Antimony TRV – As noted in our previous comments on the pre-draft, it is inappropriate to use the geometric mean of the Eco-SSL NOAEL as the alternate NOAEL. This value is higher than the lowest bounded LOAEL.	Attachment 5, Section 1.1 Antimony, Toxicity Reference Values: Revisions will be made to this text and the geometric mean will no longer be used as an alternative TRV for antimony.
UWNEU	EPA	Specific	S7.1	Vol 7	SPECIFIC COMMENTS FOR VOLUME 7, UPPER WALNUT DRAINAGE EU S7.1. Page 9, Section 1.2, Data Adequacy for PMJM: As noted in the data adequacy evaluation for the UWNEU (provided in Volume 2, Attachment 3), existing surface soil data did not meet data adequacy guidelines for metals in PMJM patches #15 and #16. Because of this data limitation, the LWNEU uncertainty analysis for PMJM was to “document the greater reliability of patches #12, #17, and #18...and their applicability to the other patches [#15 and #16] in the EU.” However, the UWNEU volume makes no mention of this data limitation and does not include a discussion of the reliability and applicability of predicted risks in patches #12, #17, and #18 to other PMJM habitat areas with sparse data. The PMJM-specific sections on data adequacy, risk conclusions, and assessment uncertainties should be revised to include a discussion of the reliability and applicability of potential risks across PMJM habitat areas within the UWNEU.	The reliability and applicability of predicted risks in patches #12, #17, and #18 to other PMJM habitat areas with sparse data will be discussed in Section 1.2 and 10.3.1.
UWNEU	EPA	Specific	S7.2	Vol 7	S7.2. Page 35, Section 10.1.4, Nickel, HQs Calculated to Characterize Uncertainty, 2nd paragraph, last sentence: Revise this sentence as follows: “...using both median BAFs and the alternative TRVs presented in the uncertainty analysis.”	Section 10.1.4 Nickel, 2nd paragraph, 2nd to last sentence will be revised as follows: For this reason, refined risk calculations for the deer mouse (insectivore) using a median soil-to-invertebrate BAF and additional TRVs were performed.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
UWNEU	EPA	Specific	S7.3	Vol 7	S7.3. Page 37, Section 10.1.4, Nickel, PMJM, 4th paragraph: The text concludes that “risks to PMJM receptors in UWNEU do not appear to be elevated above background concentrations” and that PMJM HQs are “the same as those calculated using background data”. However, nickel concentrations in the UWNEU were determined to be statistically higher than the RFETS background and a review of the PMJM-specific box plot for nickel (presented in Attachment 3) shows that the UWNEU data set is clearly shifted above the RFETS background data set. Therefore, these statements should be removed.	Section 10.1.4 Nickel, PMJM (4th paragraph), the requested sentences will not be deleted, however the following text will be added to the end of this paragraph: LOAEL HQs were less than 1 for all patches when the median soil-to-invertebrate BAF or the additional TRV were used in the risk calculations. Based on the uncertainty analysis, the potential for adverse effects are expected to be low for the PMJM in all four patches.
UWNEU	EPA	Specific	S7.4	Vol 7	S7.4. Pages 42 through 45, Sections 10.1.8 through 10.1.11, Non-PMJM – Small Home Range: In each of the referenced sections, the text states that HQs or risks were estimated using a “range of EPCs”. It is not clear from the text what is meant by this statement. Because this section is specific to non-PMJM small home range receptors, only one type of EPC (i.e., UTL) was utilized in the calculation of HQs. Therefore, any statements that HQs were calculated using a “range of EPCs” should be removed.	Section 10.1.8 through 10.1.11, Non-PMJM, Small Home Range: The statement “HQs or risks are estimated using a range of EPCs” will be removed as requested.
UWNEU	EPA	Specific	S7.5	Vol 7	S7.5. Page 45, Section 10.1.11, Total PCBs, Risk Description: This section should be revised to include any relevant information on potential sources of PCBs within the UWNEU (see Risk Description sections for bis(2-ethylhexyl)phthalate and di-n-butylphthalate for examples of expected text).	Section 10.1.11, Total PCBs, Risk Description: the requested change will be made to this section.
UWNEU	EPA	Specific	S7.6	Vol 7	S7.6. Page 51, Section 11.2, Ecological Risk Summary and Conclusions: The ecological risk conclusion summary only notes the elevated HQs for PMJM receptors from antimony, and makes no mention of potential risks from other ECOPCs which were also in the low to moderate range of concern (as identified in Table 10.1). The ecological risk summary should be revised to address potential risks to the insectivorous mourning dove from di-n-butylphthalate and to the PMJM from nickel in patch #12.	Note: Section 11.2 became Section 11.3.  Section 11.3 Summary and Conclusions - Ecological Risk: the requested change concerning di-n-butylphthalate will be made to this section. In addition, this section has been revised to include more detail on the risk characterization.
UWNEU	EPA	Specific	S7.7	Vol 7	S7.7. Table 1.2, Table 1.6 and Table 8.3: The total number of surface soil samples presented for inorganic analytes in PMJM habitat (e.g., N = 62 samples for arsenic) is inconsistent with the total number of surface soil samples provided in the Access database included on the report CD (N = 36 samples for arsenic). Based upon review of Figure 1.5, which shows all surface soil samples located within PMJM habitat, it appears that the Access database is only providing the analytical results for surface soil samples located within the UWNEU, even though samples from outside the EU were utilized in the PMJM risk assessment. For example, in patch #17 the database only provides nickel results for the two samples collected within the UWNEU boundaries, but Figure 8.3 includes nickel results for 2 samples located in the Windblown Area EU. The Access database for the UWNEU should be revised to include all samples utilized in the risk assessment, including those samples from outside the UWNEU which were included for the purposes of the PMJM risk assessment.	Tables 1.2 and 1.6, and Figure 8.3 are not inconsistent. As discussed in Section 7.1, the number of samples used in the PMJM risk characterization include samples outside the UWNEU boundary but are in the PMJM habitat patches under consideration. The data CD for the UWNEU will include a separate file that provides the PMJM risk characterization data.
UWNEU	EPA	Specific	S7.8	Vol 7	S7.8. Table 10.1: The ECOPC header for Nickel appears twice in this table, once on page 3 and again on pages 6-7. It appears that the “nickel” HQs presented on pages 6-7 are actually HQs for zinc. The ECOPC header should be changed from nickel to zinc on pages 6-7.	Table 10.1, the requested change will be made to the table.
UWNEU	EPA	Specific	S7.9	Vol 7	S7.9. Table 10.2: The EPC for nickel in patch #18 for the alternate BAF scenario is labeled as “Based on Mean”. All EPCs for PMJM should be based on the 95UCL on the mean (or the maximum, if the 95UCL is higher than the maximum), not the mean. Ensure that the nickel EPC for patch #18 is either the UCL or the MDC and revise the table accordingly.	Table 10.2 the requested change will be made to the table.
UWNEU	EPA	Specific	S7.10	Vol 7	S7.10. Attachment 1, Page 2, Detection Limit Adequacy, Section 1.2: This section compares detection limits to ecological screening levels (ESLs) not human health preliminary remediation goals (PRGs). Therefore, section text should be revised to refer to ESLs not PRGs.	Attachment 1, Section 1.2 will be completely revised and the error will be corrected.



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UWNEU	EPA	Specific	S7.11	Vol 7	S7.11. Attachment 3, Page 14, Boron, Background Comparison: This section should reiterate that concentrations of boron were not analyzed in the RFETS background data set; therefore, a statistical comparison to RFETS background was not performed.	Attachment 3, Section 4.6 Boron, 1st paragraph, the following sentence will be added: For boron in surface soil, a statistical comparison between UWNEU and RFETS background data could not be performed because RFETS background surface soil samples were not analyzed for boron.
UWNEU	EPA	Specific	S7.12	Vol 7	S7.12. Attachment 5, Page 9, Zinc: The chemical-specific uncertainty analysis for zinc is missing the section entitled "Plant Toxicity", which evaluates the potential uncertainties associated with the selected plant NOEC ESL used the calculation of HQs. The "Plant Toxicity" section should be added to the chemical-specific uncertainty analysis for zinc (Section 1.8).	Attachment 5, Section 1.8 Zinc, A <i>Plant Toxicity</i> subsection will be added to the text.
UWNEU	EPA	Specific	S7.13	Vol 7	Specific Comments Identified Previously (September 28, 2005) that Have Not Been Addressed S7.13. Page 3, Section 1.1.2, 3rd paragraph, 1st sentence: Revise or add a sentence to clarify that Pond A-5 is located in the Lower Walnut Drainage EU (LWNEU).	Section 1.1.2, 3rd paragraph, a new 2nd sentence will be added as follows: Pond A-1 through A-4 are located in the UWNEU whereas Pond A-5 is located in the LWNEU.
UWNEU	EPA	Specific	S7.14	Vol 7	S7.14. Page 5, Section 1.1.4, 1st paragraph, last sentence: This sentence indicates that PMJM trapping surveys have been conducted at "all three drainages including those in the UWNEU". Clarify which three drainages are being referenced in this statement.	Section 1.1.4, 1st paragraph, the last sentence will be revised as follows: Prior to and during the period that the PMJM has been federally protected, RFETS ecologists conducted trapping surveys, radio telemetry studies, and estimated populations in all the major drainages in RFETS including those in the UWNEU (Ebasco 1992; ECMP 1995; K-H 1996; K-H 1998; K-H 1999; and K-H 2000).
UWNEU	EPA	Specific	S7.15	Vol 7	S7.15. Page 5, Section 1.1.4: This section does not include a summary of PMJM habitat patch #9 which is partially located within the UWNEU (and partially in the Inter-Drainage EU). Revise this section to either include a discussion of PMJM habitat patch #9 or clarify that this patch will be addressed in the IDEU report.	Section 1.1.4, a summary of PMJM habitat patch #9 and #13 will be added to the end of this section.
UWNEU	EPA	Specific	S7.16	Vol 7	S7.16. Page 21, Section 7.2.6, Non-PMJM, 1st sentence: The sentence suggests that all inorganic, organic, and radionuclide surface soil ECOIs were eliminated as ECOPCs. Revise as follows: "Several inorganic, organic, and radionuclide surface soil ECOIs....".	Section 7.2.6, Non-PMJM Receptors, 1st sentence will be revised as follows: Most inorganic, organic, and radionuclide surface soil ECOIs for non-PMJM receptors in the UWNEU were eliminated from further consideration in the ECOPC identification process based on one of the following: (no changes to the rest of this sentence and paragraph).
UWNEU	EPA	Specific	S7.17	Vol 7	S7.17. Page 22, Section 7.2.6, PMJM, 2nd sentence: The sentence suggests that all ECOIs were eliminated as ECOPCs. Revise as follows: "Several ECOIs were removed....".	Section 7.2.6, PMJM Receptors, the 2nd sentence will be revised as follows: Most ECOIs were removed from further evaluation in the ECOPC identification process based on one of the following: (no changes to the rest of this sentence and paragraph).
UWNEU	EPA	Specific	S7.18	Vol 7	S7.18. Attachment 3, Page 14, Section 4.6, Boron, Pattern Recognition: It is not agreed that the boron data shown in the log probability plot "suggest a single background population". As discussed and documented previously, this approach has very low power to detect the occurrence of two populations, even when data are not limited. The claim that the plot shows a single background population should either be deleted or else modified to indicate that the data are too limited to draw a reliable conclusion about the nature of the distribution.	Attachment 3, Section 4.6.3, Boron, Pattern Recognition, Surface Soil (Non-PMJM), the following sentence will be added: The variability is likely due to the small sample size which also makes it difficult to draw a reliable conclusion about the nature of the distribution.
UWNEU	EPA	Specific	S7.19	Vol 7	S7.19. Attachment 3, Page 21, Section 4.13, Selenium, Pattern Recognition: It is not agreed that the selenium data shown in the log probability plot "indicate a single background population". An evaluation of a data set that is highly censored with multiple detection limits is extremely complex and the use of a simplistic log-probability plot is of even less reliability. The plot presented, which is based on detected samples only (N=15), provides little evidence to support the conclusion that the selenium data are from a single distribution. This claim should either be deleted or else modified to indicate that the data are too limited to draw a reliable conclusion about the nature of the distribution.	Attachment 3, Section 4.13.3 Selenium Pattern Recognition, Surface Soil (Non-PMJM), the first paragraph will be revised as follows: The log-probability plot, which includes both the detected and nondetected (multiple detection limits) selenium concentrations (Figures A3.4.10) was not resolvable. An evaluation of a data set that is highly censored with multiple detection limits using a log-probability plot is not reliable.
UWNEU	EPA	Specific	S7.20	Vol 7	S7.20. Attachment 3, Page 22, Section 4.13, Selenium, Conclusion: The lines of evidence provided in the professional judgment for selenium in PMJM surface soil do not justify the exclusion of selenium as an ECOPC. Specifically, the log probability plot for selenium is based data that are too limited (low number of samples, high censoring frequency) to draw a reliable conclusion about the nature of the distribution; a statistical comparison to RFETS background could not be performed	Attachment 3, Section 4.13 Selenium: No additional ECOPCs will be added to the UWNEU per the agency meeting on 4/12/06.

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					(due to high censoring); there are several detected samples above the ESL; and detects above the ESL appear to be located within a historical IHSS. Therefore, selenium should be retained as an ECOPC in surface soil for PMJM and carried forward in the PMJM risk characterization.	
UWNEU	EPA	Specific	S7.21	Vol 7	S7.21. Attachment 5, Page 2, Section 1.1, Antimony, TRVs: As stated in previous comments, the alternate NOAEL TRV selected for antimony (the geomean of the Eco-SSL NOAELs for reproduction and growth) is not appropriate for use. The Eco-SSL report identifies a procedure for selecting the most appropriate TRV and use of the geomean NOAEL is only appropriate if this value is below the lowest bounded LOAEL for reproduction, growth, and mortality effects. The geomean NOAEL for antimony is higher than the lowest bounded LOAEL, which comes from a study with a relatively high data quality score (as assigned by the Eco-SSL methodology) and is based on a valid reproductive endpoint. In addition, the geomean NOAEL is also higher than two unbounded LOAELs for growth and one unbounded LOAEL for mortality (USEPA 2005[2]). Finally, Sample et al. (1996) identifies mammalian TRVs for antimony that are generally similar to the Eco-SSL mammalian TRVs for antimony (NOAEL TRVs of 0.125 mg/kg/d and 0.059 mg/kg/d, respectively), both of which are lower than the geomean NOAEL (13.3 mg/kg/d). Therefore, the geomean NOAEL should be removed as an alternate NOAEL TRV for antimony.	Attachment 5, Section 1.1 Antimony, Toxicity Reference Values: Revisions will be made to this text and the geometric mean will no longer be used as an alternative TRV for antimony.
UWNEU	EPA	Specific	S7.22	Vol 7	S7.22. Attachment 5, Page 7, Section 1.5, Silver, Plant Toxicity: The alternate TRV selected is the soil screening benchmark from the EPA Region 5 Ecological Screening Levels. The soil ESLs presented in this report represent the "lowest receptor-specific ESL for either plants, invertebrates, or mammals" (EPA 1999). Based on a review of the August 2003 EPA Region 5 ESL table[3], the basis of the soil ESL for silver is not reported. Therefore, unless it is known that this ESL incorporated data on phytotoxicity, it is not appropriate to use this ESL as an alternate TRV for plants.	Attachment 5, Section 1.5 Silver, Plant Toxicity: No alternative TRV for plants is used in the risk calculations for silver. The EPA Region 5 ESL is only included in the discussion in Attachment 5 as additional information. The second sentence in this section will be revised as follows: The only additional TRV information available in the literature is was an ESL soil screening benchmark from EPA Region 5.
LWNEU	CDPHE	Specific	8.1	Vol 8	8.1. Executive Summary – It is not appropriate to state that the ECOPC/receptor pairs were evaluated in the risk characterization using a range of EPCs, exposure scenarios, and toxicity reference values to give a range of risk estimates. This statement should be revised to clarify the use of default assumptions and alternate assumptions for the uncertainty analysis. Additionally, this section may need to be revised in accordance with the following comments.	Executive Summary, 4th paragraph includes the following text: ECOPC/receptor pairs were evaluated in the risk characterization using conservative default exposure and risk assumptions as defined in the Comprehensive Risk Assessment (CRA) Methodology. If needed, a refinement of the exposure and risk models based on chemical-specific uncertainties associated with the initial default exposure models provide a refined estimate of potential risk.
LWNEU	CDPHE	Specific	8.2	Vol 8	8.2. Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.3.1 Uncertainties Associated with Data Adequacy and Quality, will provide a brief summary and refer back to Section 1.2 for detailed information.  Section 10.3.3. Uncertainties Associated with Eliminating of Ecological Contaminants of Interest Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say "unlikely to result in risk concerns for ecological receptors and are well within regional background levels."  Section 10.4 Summary of Significant Sources of Uncertainty, the following text will be added: While some of the general sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.
LWNEU	CDPHE	Specific	8.3	Vol 8	Attachment 3: 8.3. Section 4.0- Professional Judgment - Background Comparisons – Please revise background comparison discussions in accordance with the above noted comment # 4.5.	Attachment 3, Section 4.0 Professional Judgment: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.

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LWNEU	CDPHE	Specific	8.4	Vol 8	8.4. Section 4.0- Professional Judgment – Elimination of ECOIs as ECOPCs – Please note the following comments: (a) Based on the professional judgment evaluation using spatial trends, process knowledge, statistical background comparisons, and/or log-probability plots, several ECOIs should be carried forward into the risk characterization step (e.g., antimony, molybdenum, nickel, and tin).	Attachment 3, Section 4.0: No additional ECOPCs will be added to the LWNEU per the agency meeting on 4/12/06.
LWNEU	CDPHE	Specific	8.4	Vol 8	(b) Discussions of process knowledge, spatial trends, background comparisons, and log-probability plots for several ECOIs (e.g., aluminum, antimony, arsenic, chromium, molybdenum, vanadium, and zinc) should be revised to present accurate information.	The professional judgment sections will be reviewed and revised as needed.
LWNEU	CDPHE	Specific	8.4	Vol 8	(c) Log-probability plots are given too much weight and the limited power of this approach to detect the occurrence of two populations is not taken into consideration. Please note that the statistical comparison to the RFETS background provides the highest weight-of-evidence.	The log-probability plots are only one line of evidence and are not given any additional weight relative to other lines of evidence. Text related to probability plots will be reviewed and revised if appropriate for accuracy.
LWNEU	EPA	Specific	S8.1	Vol 8	SPECIFIC COMMENTS FOR VOLUME 8, LOWER WALNUT DRAINAGE EU S8.1. Section 7.1, last paragraph: The text states that there are 18 sample locations in PMJM habitat in the LWNEU. However, Table 1.2 and Table 1.6 show a total of 8 to 12 surface soil samples (depending upon the analyte) in PMJM habitat. Confirm the correct number of sample locations in PMJM habitat and make any corrections to the text, tables, and figures as necessary.	Section 7.1, last paragraph, will be modified as follows: As described in Section 1.1.4, there are 18 sample locations occurring in PMJM habitat within the LWNEU. Surface soil samples were collected and analyzed for inorganics (9 out of 18 samples), organics (8 out of 18 samples), and radionuclides (12 out of 18 samples). A data summary is provided in Table 1.6 for surface soil in PMJM habitat. Sampling locations and PMJM habitat patches within the LWNEU are shown on Figure 1.5.
LWNEU	EPA	Specific	S8.2	Vol 8	S8.2. Section 7.2.6, ECOPC Summary, PMJM, 2nd sentence: All ECOIs were excluded as ECOPCs for the PMJM. Therefore, this sentence should be revised as follows: "All ECOIs were removed..."	Section 7.2.6, Summary of Surface Soil ECOPC PMJM Receptors, 2nd sentence will be modified as follows: ECOIs were removed from further evaluation in the ECOPC identification process based on one of the following: (remaining sentence is unchanged).
LWNEU	EPA	Specific	S8.3	Vol 8	S8.3. Section 10.1, page 24, last full paragraph: The text states that HQs were calculated using a "range of EPCs". This statement is ambiguous and potentially confusing. Depending upon the relative home range size of the wildlife receptor, only one type of EPC (i.e., either the UTL or the UCL) was utilized in the calculation of HQs. Therefore, the statement that HQs were calculated using a "range of EPCs" should be revised or removed.	Section 10.1 Chemical Risk Characterization, 2nd to last paragraph, 2nd sentence will be modified as follows: These include the default and refined HQs if needed. The results for each ECOPC are discussed in more detail below.
LWNEU	EPA	Specific	S8.4	Vol 8	S8.4. Section 10.1.1, page 25, IDDT, Risk Description, Non-PMJM, last paragraph: This paragraph presents a summary the detection frequency of DDT in surface soil from the LWNEU and the adjacent Windblown area and in sediments in Walnut Creek and McKay Ditch as evidence supporting the conclusion that risks to wildlife are likely to be low. This paragraph should be revised to include a discussion on the adequacy of the detection limits achieved relative to the limiting NOAEL and LOAEL-based ESLs.	Section 10.1.1, 4,4-DDT Risk Description, Non-PMJM Receptors - Small Home-Range will be revised as suggested.
LWNEU	EPA	Specific	S8.5	Vol 8	S8.5. Section 11.2: This section does not summarize the results of the PMJM ECOPC selection process. The 3rd sentence should be revised as follows: "No ECOPCs were identified for PMJM receptors for surface soil or for burrowing mammals from subsurface soil."	Note Section 11.2 is now a new Section 11.3. Section 11.3 will be revised to provide more detail on the ECOPC selection process. The 4th sentence will be modified as follows: No ECOPCs were identified for PMJM receptors for surface soil or for burrowing mammals from subsurface soil.
LWNEU	EPA	Specific	S8.6	Vol 8	S8.6. Table 1.1 cites the NE-1 report, however, the ecological component of this report no longer exists. Please revise the table to remove the citation. In addition, a summary of the disposition of Pond A-5 should be added.	Table 1.1 will be modified to remove the NE-1 report and add a summary of the disposition of Pond A-5.
LWNEU	EPA	Specific	S8.7	Vol 8	S8.7. Table 7.15: This table presents the NOAEL ESL (9.35 mg/kg) for arsenic instead of the Threshold ESL (35.9 mg/kg). The arsenic UTL (12.8 mg/kg) is less than the Threshold ESL, therefore, the column titled "EPC>ESL?" should be changed to "No".	Table 7.15, The tESL of 35.9 ug/kg will be added to the table. Column EPC>ESL?, Row Arsenic will be changed to "No".



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LWNEU	EPA	Specific	S8.8	Vol 8	S8.8. Attachment 3, Professional Judgment: As noted in the general comments above, the professional judgment sections for several ECOIs present process knowledge conclusions that do not accurately summarize the information presented in CRA Volume 2 (e.g., antimony, arsenic, vanadium, zinc). In addition, the conclusion that RFETS surface soil concentrations appear to reflect naturally occurring conditions for several metals is not supported by a review of the spatial trends maps provided in CRA Volume 2 (e.g., antimony, arsenic, chromium, molybdenum, nickel, selenium, tin, zinc). Also, as noted in the general comments above, log probability plots have low power to reveal distinct distributions, especially when data are limited, results are highly censored, there is high variability between samples, and/or the shift relative to background is expected to be low. In light of these limitations, it is not agreed that the log probability plots indicate that the LWNEU data set represents “a single background distribution” for several ECOIs (e.g., aluminum, chromium, molybdenum, vanadium, zinc). The professional judgment-based discussions of process knowledge, spatial trends, and probability plot conclusions for the ECOIs listed above should be revised to accurately reflect the process knowledge information and the spatial trends maps presented in Volume 2, and to accurately reflect the limitations in probability plots.	Minor changes will be made to the process knowledge sections for antimony, vanadium, and zinc to make them consistent with the information provided in Appendix A, Volume 2, Attachment 8. The process knowledge section for arsenic is consistent with Attachment 8. The spatial trend sections in Attachment 3 to LWNEU for antimony, arsenic, chromium, molybdenum, nickel, selenium, tin, and zinc will not be changed because DOE has concluded that the spatial distributions of these metals represent naturally occurring conditions. The limited power of the log-probability plots to distinguish two populations is already noted in footnote 2 of the Attachment 3 text. As a result, the existing text uses wording that the log-probability plot “suggests” the presence of a single population. No changes will be made to the Pattern Recognition text as a result of this comment.
LWNEU	EPA	Specific	S8.9	Vol 8	S8.9. Attachment 3, Aluminum, Pattern Recognition: The text states that interpretation of the log probability plot “is complicated by the apparent inclusion of nondetected concentrations forming a horizontal step that projects off the background line”. Inspection of the underlying LWNEU data set for aluminum shows that none of the samples are ranked as non-detect (this is also supported by the detection frequency of 100% presented in Table 1.5 for aluminum). Therefore, this statement should be removed. In addition, inspection of the log probability plot shows that aluminum concentrations form a stepped line, which does not support the conclusion that the data are from a “single background population”. The pattern recognition section for aluminum should be revised to remove the discussion of “non-detects” and to conclude that the log probability plot does not support the conclusion that the dataset is representative of a single distribution.	The text will be revised as suggested.
LWNEU	EPA	Specific	S8.10	Vol 8	S8.10. Attachment 3, Antimony, Conclusion: The conclusion to exclude antimony as an ECOPC in the professional judgment is not supported. The process knowledge presented in CRA Volume 2[4] indicates that antimony may be present in RFETS soils (particularly in the Windblown Area, No Name Gulch, and Lower Woman Drainage EUs) due to site-related activities. In addition, inspection of the spatial trends maps indicates that detected concentrations of antimony are often located in areas that have been impacted by site-related activities. While RFETS antimony concentrations are within the range of Colorado and the bordering states, the site data set was too limited to create meaningful the log probability plots or perform statistical comparisons with RFETS background. The risk potential section shows that the EPC exceeds ESLs for three receptors and that the detection limits achieved for several samples were inadequate to assess potential risks to the more sensitive ecological receptors. Based on these considerations, antimony should be retained as an ECOPC.	The text will be revised to indicate that antimony is unlikely to be present in LWNEU (as opposed to RFETS, as is currently stated) soil as a result of historical site-related activities. No additional ECOPCs will be added to the LWNEU per the agency meeting on 4/12/06.
LWNEU	EPA	Specific	S8.11	Vol 8	S8.11. Attachment 3, Chromium, Pattern Recognition: This section suggests that the stepped line in the log probability plots for chromium is due to “two mineral phase conditions in the soils that are apparently controlling the chromium concentration at a quasi-equilibrium condition”. However, even if there are soil conditions that influence chromium mineral phase, this will have no effect on the concentration of (total) chromium in soil at a location, or on the log-probability plot. Either add more detail on this concept and why it should be considered realistic and relevant, or else delete the discussion.	Attachment 3, Chromium: The discussion will be deleted as suggested and the text will be revised to indicate that the log-probability plot does not suggest the presence of a single background population.
LWNEU	EPA	Specific	S8.12	Vol 8	S8.12. Attachment 3, Nickel, Conclusion: The conclusion to exclude nickel as an ECOPC for PMJM is not supported. The process knowledge section indicates that, while site-related nickel is not expected in LWNEU soils, nickel was present in RFETS wastes. Inspection of the spatial map for nickel in CRA Volume 2 shows that the highest nickel concentrations in surface soil tend to be from site-impacted areas. A statistical comparison to RFETS background concluded that concentrations were statistically higher in PMJM habitat areas relative to background. The results of the statistical comparison are supported by a review of the box plot for surface soils in PMJM, which shows a data set that is clearly shifted above the RFETS data set. In addition, all soil samples (N=9) collected in PMJM habitat areas exceed the PMJM-specific NOAEL ESL. Based on these considerations, nickel should be retained as an ECOPC for PMJM.	No additional ECOPCs will be added to the LWNEU per the agency meeting on 4/12/06.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
LWNEU	EPA	Specific	S8.13	Vol 8	S8.13. Attachment 3, Tin, Comparison to Background: The first sentence of this section states that all background samples were non-detect. However, the 6th sentence (top of page 27) states that "one location exists in the LWNEU that is above the site background MDC [maximum detected concentration]". If all background samples were non-detect, there cannot be a background MDC. This sentence should be revised as follows: "The detected tin concentration in one sample from the LWNEU exceeds the range of RFETS background concentrations. While this observation is consistent with the hypothesis that EU levels are similar to RFETS background, because of the heavy censoring and varying detection limits in the two data sets, it is not possible to conclude with confidence that there is no difference."	The text will be revised as suggested.
LWNEU	EPA	Specific	S8.14	Vol 8	S8.14. Attachment 3, Zinc, Comparison to Background, Non-PMJM, 1st paragraph, last sentence: The text states that the "LWNEU zinc MDC for surface soil (77.5 mg/kg) was slightly above the site background MDC of 75.9 mg/kg". However, Figure 3.2.23 does not support this statement. In this figure, the upper whisker for the LWNEU data set is plotted at 64 mg/kg, and there are no values plotted above the upper whisker (which indicates that the whisker is plotted at the maximum value). Based on the summary statistics for zinc shown in Table A3.2.6, the text is correct (i.e., the MDC = 77.5 mg/kg) and Figure A3.2.23 should be revised.	Figure 3.2.23 shows concentrations of zinc within PMJM habitat only. Figure 3.2.24 shows zinc in the entire LWNEU and the MOC is 77.5 mg/kg on Figure 3.2.24. no change is needed in the text or figure.
LWNEU	EPA	Specific	S8.15	Vol 8	Specific Comments Identified Previously (July 13, 2005) that Have Not Been Addressed S8.15. Section 7.3.5, 1st sentence: The statement that subsurface soil data sets "have slightly elevated concentrations compared to the background data set..." is subjective and should be revised to "have concentrations that are statistically higher than background..."	Section 7.3.5 Subsurface Soil Professional Judgment, 1st sentence will be modified as follows: ECOIs with subsurface soil concentrations that exceed NOAEL ESLs, which have been detected in more than 5 percent of samples, that have concentrations statistically higher than background data, and which exceed tESLs are subject to a professional judgment evaluation.
LWNEU	EPA	Specific	S8.16	Vol 8	S8.16. Section 1.1.5, Subsurface Soil: Because all but one sampling station was located near Pond A-5, the current dataset is not spatially representative of the entire EU. While Section 1.1.5 does not need to be revised, please ensure that the Data Adequacy Assessment for subsurface soil for the LWNEU provides sufficient rationale as to why the existing dataset is adequate for use given its limited spatial extent.	Section 1.1.5 Data Description, Subsurface Soil: No changes will be made to the text. Section 1.2 Data Adequacy Assessment will be modified to discuss why the existing data set is adequate for use in the LWNEU.
LWNEU	EPA	Specific	S8.17	Vol 8	S8.17. Table 1.1: Please add a column that identifies the chemicals of potential concern identified for each IHSS.	Chemicals of potential concern based on previous investigations are identified in the FY2005 Final Historical Release Report, Appendix B to the RI/FS report. No changes will be made to Table 1.1.
LWNEU	EPA	Specific	S8.18	Vol 8	S8.18. Table 1.2: Please split the row for "Organics" into the following analysis suites: SVOCs, VOCs, PCBs, Pesticides, Herbicides, Dioxins.	The purpose of Table 1.2 is to give the reader a general understanding of the number of inorganic, organic, and radionuclide samples in each medium for a given EU. A more detailed breakdown of organics is provided in subsequent Section 1 tables showing summary statistics. No changes will be made to Table 1.1.
LWNEU	EPA	Specific	S8.19	Vol 8	S8.19. Table 7.10, 7.11, and 7.16: The "ECOPC?" column for ECOIs without ESL should be changed from "No" to "UT".	Analytes with uncertain toxicity (UT) are identified in Tables 7.2, 7.3, and 7.12 and are discussed in Section 10. Therefore, no changes will be made to Tables 7.10, 7.11, and 7.16.
LWNEU	EPA	Specific	S8.20	Vol 8	S8.20. Table 8.2: Please add a new footer to the table to briefly summarize the difference between the Tier 1 and Tier 2 EPCs.	Section 8.1 Exposure Point Concentrations, 1st paragraph, a new second sentence will be added as follows: Tier 1 EPCs are based on the upper confidence limits of the arithmetic mean concentration for the EU data set and Tier 2 EPCs are calculated using a spatially-weighted averaging approach. No changes will be made to Table 8.2.
LWNEU	EPA	Specific	S8.21	Vol 8	S8.21. Figures 1.5, 1.6, 1.7, 8.1: Please use a different symbol or shading to indicate which sampling locations were only analyzed for radionuclides and metals.	In Volume 2, Attachment 3, figures are provided showing sampling locations for each analyte group (including radionuclides and metals) by medium. Therefore, no changes will be made to Figures 1.5, 1.6, 1.7 and 8.1.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
LWNEU	EPA	Specific	S8.22	Vol 8	S8.22. Figure 1.6 and 1.7: Because a large number of samples were collected from Pond A-5, it is difficult to distinguish one location from another. If possible, please include a figure inset that provides a magnified view of Pond A-5.	The risk characterization does not depend on the visual representation of sample locations. No changes will be made to Figures 1.6 and 1.7.
LWNEU	EPA	Specific	S8.23	Vol 8	S8.23. Attachment 3, DDT, Process Knowledge: It is not clear if the OU2 903 Pad, Mound, and East Trenches Area Risk Assessment (DOE 1995) and the OU6 RFI/RII Report (DOE 1996) addressed potential risks to both human and ecological receptors. Please clarify which receptors and pathways were evaluated. If ingestion exposures of wildlife receptors were not included, these reports cannot be used as rationale that 4,4'-DDT is not of potential concern to wildlife receptors.	All references to OU2 will be deleted. Attachment 3, DDT Process Knowledge will focus on information in the ChemRisk Task 1 Report.
LWNEU	EPA	Specific	S8.24	Vol 8	S8.24. Attachment 3, Molybdenum, Section 4.8.2, Spatial Trends: The statement that molybdenum concentrations "reflect naturally occurring molybdenum" is not supported by a review of spatial trends map for molybdenum (CRA Volume 2). In this figure, molybdenum concentrations are not above the ESL in nearly all samples from EUs surrounding the IA. When molybdenum concentrations exceed the ESL, the samples are usually from areas where site-related activities have occurred. Please revise statements regarding the spatial patterns for molybdenum accordingly.	Attachment 3, Section 4.8.2 Molybdenum Spatial Trends: If ECOI levels are higher in historical IHSSs within the EU, then to be conservative, the ECOI is considered a ECOPC regardless of other lines of evidence. If ECOI levels are higher in historical IHSSs outside the EU, then this is not necessarily evidence that the ECOIs are ECOPCs in this EU. In this case, other lines of evidence are considered. No changes will be made to the text.
LWNEU	EPA	Specific	S8.25	Vol 8	S8.25. Attachment 3, Molybdenum, Section 4.8.4, Background Comparison: There is no evidence presented to support the conclusion that J- and B- qualified detects are "suspect". These qualifiers indicate that molybdenum is present above the detection limit in these samples, but the reported levels are estimated. Please revise these sentences accordingly.	Attachment 3, Section 4.8.4 Molybdenum Background Comparison: Discussion of J- and B-qualified data will be deleted.
LWNEU	EPA	Specific	S8.26	Vol 8	S8.26. Attachment 3, Tin, Section 4.12.2, Spatial Trends: The statement that tin concentrations "reflect naturally occurring tin" is not supported by a review of spatial trends map for molybdenum (CRA Volume 2). In this figure, tin concentrations are non-detect in nearly all samples from EUs surrounding the IA, with the exception of the Windblown Area EU and a portion of the Rock Creek EU. When tin concentrations were detected above the ESL, the samples are usually from areas where site-related activities have occurred. Please revise statements regarding the spatial patterns for tin accordingly.	Attachment 3, Section 4.12.2 Tin Spatial Trends: If ECOI levels are higher in historical IHSSs within the EU, then to be conservative, the ECOI is considered a ECOPC regardless of other lines of evidence. If ECOI levels are higher in historical IHSSs outside the EU, then this is not necessarily evidence that the ECOIs are ECOPCs in this EU. In this case, other lines of evidence are considered. No changes will be made to the text.
LWNEU	EPA	Specific	S8.27	Vol 8	S8.27. Attachment 3, Zinc, Section 4.14.2, Spatial Trends: The statement that zinc concentrations "reflect naturally occurring zinc" is not supported by a review of spatial trends map for zinc (CRA Volume 2). In this figure, zinc concentrations are not above the maximum background concentration in nearly all samples from EUs surrounding the IA. When zinc concentrations exceed the maximum background concentration, the samples are usually from areas where site-related activities have occurred. Please revise statements regarding the spatial patterns for zinc accordingly.	Attachment 3, Section 4.14.2 Zinc Spatial Trends: If ECOI levels are higher in historical IHSSs within the EU, then to be conservative, the ECOI is considered a ECOPC regardless of other lines of evidence. If ECOI levels are higher in historical IHSSs outside the EU, then this is not necessarily evidence that the ECOIs are ECOPCs in this EU. In this case, other lines of evidence are considered. No changes will be made to the text.
LWNEU	EPA	Specific	S8.28	Vol 8	S8.28. Attachment 3: This attachment is missing the following information in the professional judgment evaluations – 1) a description and interpretation summary of surface soil box plots for chromium, lithium, and zinc; 2) a statement regarding potential sources in the LWNEU for vanadium.	Box plots have been provided for information only. For professional judgment, a comparison of site and background data ranges provides the reader a sense for the difference in the magnitude of the site and background concentrations. A discussion of box plots of site and background data sets provides additional detail; however, we have not emphasized the box plots so that there is not an implication that we are providing extra weight to this line of evidence. The existing process knowledge section for vanadium indicates vanadium is unlikely to be present in RFETS soil as a result of historical site-related activities. No changes will be made to the text.
WBEU	CDPHE	Specific	9.1	Vol 9	9.1. Executive Summary –Please note the following comments: (a) It is not appropriate to state that the ECOPC/receptor pairs were evaluated in the risk characterization using a range of EPCs, exposure scenarios, and toxicity reference values to give a range of risk estimates. This statement should be revised to clarify the use of default assumptions and alternate assumptions for the uncertainty analysis.	Executive Summary: The following text will be deleted - The ECOPC/receptor pairs were evaluated in the risk characterization using a range of EPCs, exposure scenarios, and toxicity reference values (TRVs) to give a range of risk estimates. Instead, the text has been revised to include more detail on the ECOPC identification process and risk characterization.
WBEU	CDPHE	Specific	9.1	Vol 9	(b) It is not appropriate to conclude that no significant risks to wildlife receptors that may use the WBEU are predicted. This statement should be revised to indicate "low to potentially significant risks" to capture the full extent of risk estimates using default and alternative assumptions for different receptors and ECOPCs as per Section 10.1 on the interpretation of HQs.	Per the consultative process, the RFCA Parties agree to use the following text in the Executive Summary and in Section 11.3: Based on default and refined calculations, site-related risks are likely to be low for the ecological receptors evaluated in the WBEU.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
WBEU	CDPHE	Specific	9.2	Vol 9	9.2. Section 10.1- Chemical Risk Characterization – Please note the following comments on risk characterization for chromium and nickel:	No response necessary.
WBEU	CDPHE	Specific	9.2	Vol 9	(a) Risk to the mourning dove (insectivore) from chromium should be interpreted as potentially significant based on 100 percent of LOAEL HQs between 1 and 5 (Table 10.2). Additionally, overall risk classification of low to potentially significant captures risks based on the default and uncertainty analysis HQs.	Section 10.1: Chromium has the potential for adverse effects using the default risk model. However, LOAEL HQs are less than one using the median BAF as prescribed by USEPA guidance. The overall conclusion will state that the potential for adverse effects is low.
WBEU	CDPHE	Specific	9.2	Vol 9	(b) Risk to the deer mouse (insectivore) from nickel should be interpreted potentially significant based on 97 percent of LOAEL HQs between 1 and 5 and 3 percent between 5 and 10 (Table 10.2).	Section 10.1: Nickel has the potential for adverse effects using the default risk model. However, LOAEL HQs are less than one using the median BAF or refined TRVs as prescribed by USEPA guidance. The overall conclusion will state that the potential for adverse effects is low.
WBEU	CDPHE	Specific	9.2	Vol 9	(c) It is not appropriate to downplay site-specific potentially significant risks for nickel based on the background risks. It is appropriate to characterize background risks to facilitate risk management decision-making but background risks should not be used to demonstrate overestimation of risk in the uncertainty analysis. For example, background risks could be higher as a result of contamination from other sources.	Section 10.1: Background risks will be presented for comparative purposes only. Background risks will not be used to demonstrate overestimation of WBEU risks.
WBEU	CDPHE	Specific	9.3	Vol 9	9.3. Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	<p>Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.3.1 Uncertainties Associated with Data Adequacy and Quality, will provide a brief summary and refer back to Section 1.2 for detailed information.</p> <p>Section 10.3.3. Uncertainties Associated with Eliminating of Ecological Contaminants of Interest Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say: "unlikely to result in risk concerns for ecological receptors and are well within regional background levels."</p> <p>Section 10.4 Summary of Significant Sources of Uncertainty, the following text will be added: While some of the general sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.</p>
WBEU	CDPHE	Specific	9.4	Vol 9	9.4. Section 11.2- Summary and Conclusions – The overall conclusions are too broad to capture the full extent of potential risks based on default HQs and uncertainty analysis HQs. Please revise this section to conclude low to potentially significant risks (vs. no significant risks stated in the text). Also, it is important to discuss the limitation of wildlife biomonitoring studies that they did not address small home range animals.	<p>Note: Section 11.2 became Section 11.3.</p> <p>Section 11.3 Summary and Conclusions for Ecological Risk: This section will be completely re-written and will provide more detail on the results of the risk characterization. In particular, ECOPC/receptor pairs that had LOAEL HQs greater than 1 using the default assumptions are discussed in more detail in the revised conclusions.</p> <p>Limitations of wildlife biomonitoring studies will be addressed in Section 10.2 and includes the following text: Although a comprehensive compilation of monitoring results has not been presented, the annual reports of the monitoring program provide localized information and insights on the general health of the RFETS ecosystem.</p>
WBEU	CDPHE	Specific	9.4	Vol 9	Attachment 3: 9.5. Section 4.0- Professional Judgment - Background Comparisons – Please revise background comparison discussions in accordance with the above comment #4.5.	Attachment 3, Section 4.0 Professional Judgment: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
						text.
WBEU	EPA	Specific	S9.1	Vol 9	SPECIFIC COMMENTS FOR VOLUME 9, WINDBLOWN AREA EU S9.1. Section 1.1, last paragraph: This paragraph provides a brief description of the IHSS located within the WSEU and summarizes the types of accelerated actions that were performed. However, as written, it is not clear what triggered the need for accelerated actions. This section should be revised to identify the basis of the action level which was exceeded (i.e., human health and/or ecological), as well as the media and analytes which were above an action level in one or more IHSSs.	Section 1.1: The requested information is provided in the HRR (Appendix B) as referenced in the previous paragraph. However, the following statement will be added to the last paragraph - "In general, accelerated actions were designed to address human health exposures. The intent of the ecological component of the CRA is to evaluate any potential risk to ecological receptors associated with the residual contamination at the site following the accelerated actions."
WBEU	EPA	Specific	S9.2	Vol 9	S9.2. Section 7.2.2, Detection Frequency Evaluation: The text concludes that a single isolated detection of di-n-butylphthalate is unlikely to result in population-level risks. However, as demonstrated in the detection limit adequacy evaluation (Attachment 1, Table A1.3) the detection limits achieved for di-n-butylphthalate were all above the lowest ESL. Because the detection limits were not adequate for the purposes of characterizing ecological risks, it is not appropriate to conclude that population-level risks are unlikely. Rather, the correct interpretation is that the detection limits were not adequate to derive meaningful risk conclusions for di-n-butylphthalate.	Section 7.2.2 Surface Soil Frequency of Detection Evaluation: The uncertainty in the overall risk estimates resulting from the high detection limits for di-n-butylphthalate will be discussed in the text.
WBEU	EPA	Specific	S9.3	Vol 9	S9.3. Section 7.2.6, Surface Soil ECOPC Summary, PMJM: The text incorrectly states that "no ECOPCs were identified for PMJM receptors in the WBEU". The WBEU does not include an ECOPC selection for PMJM because PMJM habitat within the WBEU was evaluated as part of the LWOEU and UWNEU. This sentence should be revised as follows: "An ECOPC selection was not performed for PMJM in the WBEU because PMJM habitat within the WBEU was evaluated as part of the LWOEU and UWNEU."	Section 7.2.6 Summary of Surface Soil Ecological Contaminants of Potential Concern, PMJM Receptors, the following sentence will be added: An ECOPC identification process was not performed for PMJM in the WBEU because PMJM habitat within the WBEU was evaluated as a part of either UWNEU or LWOEU.
WBEU	EPA	Specific	S9.4	Vol 9	S9.4. Section 7.4, ECOPC Summary, last sentence: As noted above, PMJM habitat within the WBEU was evaluated as part of the LWOEU and UWNEU. This sentence should be revised to remove reference to PMJM receptors.	Section 7.4 Summary of Ecological Contaminants of Potential Concern, the last sentence will be revised to remove the words "PMJM receptors".
WBEU	EPA	Specific	S9.5	Vol 9	S9.5. Section 8.4, Intake & Exposure Estimates, PMJM: The text incorrectly states that "no ECOPC/PMJM receptor pairs were identified in Section 7". The WBEU does not include an ECOPC selection for PMJM because PMJM habitat within the WBEU was evaluated as part of the LWOEU and UWNEU. This section should be revised as follows: "An ECOPC selection was not performed for PMJM in the WBEU because PMJM habitat within the WBEU was evaluated as part of the LWOEU and UWNEU."	In Section 7, it is determined that an ECOPC identification process will not be performed for PMJM receptors in the WBEU because PMJM habitat within the WBEU will be evaluated as part of either UWNEU or LWOEU. In Section 8.4, the following will be deleted: PMJM Receptors (the subheading) and the following text: No ECOPC/PMJM receptor pairs were identified in Section 7.0. No further evaluations were conducted.
WBEU	EPA	Specific	S9.6	Vol 9	S9.6. Section 10.1.1, Chromium, Terrestrial Plants & Invertebrates, 7th paragraph: The sentence describing the basis of the earthworm toxicity value incorrectly makes reference to soybean roots. This sentence should be revised as follows: "The alternative LOEC is representative of a concentrations at which there was a 30 percent reduction in earthworm growth."	Section 10.1.1, Chromium, Terrestrial Plants and Invertebrates, the 7th paragraph, the last sentence will be revised as follows: The alternative LOEC is representative of a concentration at which there is a 30 percent reduction in earthworm growth (see Attachment 5).
WBEU	EPA	Specific	S9.7	Vol 9	S9.7. Section 10.1.2, Manganese, 1st sentence: Manganese was not identified as an ECOPC for terrestrial plants. This sentence should be revised as follows: "Manganese HQs for the deer mouse (herbivore) are presented in Table 10.1".	Section 10.1.2, Manganese, the 1st sentence will be revised as follows: Manganese HQs for the deer mouse (herbivore) receptors are presented in Table 10.1..
WBEU	EPA	Specific	S9.8	Vol 9	S9.8. Section 10.1.3, Nickel, Non-PMJM Small Home Range Receptors, 3rd paragraph: This paragraph incorrectly references the UWNEU when discussing comparisons to background HQs. This paragraph should be revised to include a discussion based on the WBEU.	Section 10.1.3, Nickel, Non-PMJM Small Home Range, 3rd paragraph, references to UWNEU will be removed and replaced with WBEU.



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WBEU	EPA	Specific	S9.9	Vol 9	S9.9. Section 10.1.9, PCB, Risk Description: This section should be revised to include a discussion of whether the WBEU contains any potential PCB source areas, similar to other ECOPC Risk Description sections (e.g., see Section 10.1.8 for Endrin).	Section 10.1.9, Total PCBs, Risk-Description: the requested change will be made to the text.
WBEU	EPA	Specific	S9.10	Vol 9	S9.10. Section 10.1.9, PCB, Non-PMJM Small Home Range Receptors, 2nd sentence: This sentence is incomplete, and should be revised as follows: "NOAEL HQs for the mourning dove (insectivore) were greater than or equal to 1 (Tier 1 UTL =3)."	Section 10.1.9, Total PCBs, Non-PMJM Receptors- Small Home Range, 1st sentence will be added as follows: NOAEL HQs using default risk models were greater than 1 for the mourning dove (insectivore).
WBEU	EPA	Specific	S9.11	Vol 9	S9.11. Table 7.13: The 2nd column header should be changed from "Exceed Any NOAEL ESL?" to "Exceeds Prairie Dog NOAEL ESL?"	Table 7.13, 2nd Column Heading will be changed to "Exceeds Prairie Dog NOAEL ESL"
WBEU	EPA	Specific	S9.12	Vol 9	S9.12. Table 8.3: Change "Total PCs" to "Total PCBs". Change "N/A = No available" to "N/A = Not available".	Table 8.3, the requested changes will be made.
WBEU	EPA	Specific	S9.13	Vol 9	S9.13. Attachment 1, Detection Limit Adequacy, Section 1.2: This section compares detection limits to ecological screening levels (ESLs) not human health preliminary remediation goals (PRGs). Therefore, section text should be revised to refer to ESLs not PRGs.	Attachment 1, Section 1.2: The error will be corrected in the revised text.
WBEU	EPA	Specific	S9.14	Vol 9	S9.14. Attachment 3, Section 2.4: This section incorrectly states that "there are no PMJM habitats within [the] WBEU". The WBEU does contain portions of PMJM habitat patches, however, PMJM habitat within the WBEU was evaluated as part of the LWOEU and UWNEU. This section should be revised as follows: "PMJM habitat within the WBEU was evaluated as part of the LWOEU and UWNEU."	Attachment 3, Section 2.4, the text will be revised as follows: There are small portions of several PMJM patches within WBEU; however, these patches are evaluated in either LWOEU or UWNEU.
WBEU	EPA	Specific	S9.15	Vol 9	S9.15. Attachment 3, Boron, Molybdenum and Tin, Background Comparison: These sections should reiterate that concentrations of these metals were either not analyzed (e.g., boron) or were all non-detect (e.g., molybdenum, tin) in the RFETS background data set; therefore, a statistical comparison to RFETS background was not performed.	Attachment 3, Section 4.0 Boron, Molybdenum and Tin Comparison to RFETS Background and Other Background Data Sets: The text will be revised as suggested.
WBEU	EPA	Specific	S9.16	Vol 9	S9.16. Attachment 3, Barium, Section 4.3.5, Risk Potential: This section incorrectly concludes that because "the [herbivorous mourning dove] ESL is not below the range of background concentrations...[it] is likely to be overly conservative for use in screening level risk assessments." The fact that the ESL is higher than background supports the conclusion that the ESL is not likely to be overly conservative. This sentence should be revised accordingly.	Attachment 3, Barium, Section 4.3.5, Risk Potential: this sentence will be deleted from the text and no background discussion is included in this section.
WBEU	EPA	Specific	S9.17	Vol 9	S9.17. Attachment 3, Molybdenum, Log-Probability Plots: As noted in the general comments above, the use of a log-probability plot is of limited use for a data set that is highly censored. Currently, the method used to fit a probability plot to a censored data set is incorrect. For molybdenum, probability plots are shown based on detects only, based on non-detects only, and based on all data. For the detects-only plot, non-detects are not used in computing the z-score. This approach is not appropriate because the z-scores must be based on the entire data set. These probability plots should be revised to present z-scores calculated using all data and any log probability plot discussions should be revised accordingly.	Attachment 3: Figures A3.4.7a and A3.4.7b will be deleted and the text will be revised accordingly.
WBEU	EPA	Specific	S9.18	Vol 9	Specific Comments Identified Previously (September 21, 2005) that Have Not Been Addressed S9.18. Section 7.1: Include a new bullet to describe the surface water data set utilized in the wildlife ingestion calculations.	Section 7.1, the last paragraph, the following text will be added: As discussed in Section 8.0, surface water EPCs are used in the risk model to estimate exposure via the surface water ingestion pathway. One hundred and thirty-six distinct surface water samples were collected in the WBEU and analyzed for inorganics (38 samples), organics (16 samples), and radionuclides (136 samples).

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WBEU	EPA	Specific	S9.19	Vol 9	S9.19. Section 8.1, Exposure Point Concentrations: If surface water data are not available for ECOPCs, the text should include a discussion of how the absence of water data will impact risk calculations and conclusions.	Surface water contributes minimally to overall exposure, so absence of surface water data represents minimal uncertainties in overall risk estimate. No changes will be made to the text. However, Table 8.3 will be revised to clarify that the values for the organics are non-detects(ND) and not NA.
WBEU	EPA	Specific	S9.20	Vol 9	S9.20. Attachment 2, Data Quality Assessment: The text (page 2, Section 2.0) and Table A2.1 identify the total number of V&V records as 194,556. However, this Table A2.6 shows 324,257 records. Rectify this discrepancy and ensure that any potentially impacted text and tables are revised as appropriate.	Table A2.1 and Section 2.0 text summarize V&V data used in the WBEU risk characterization. Table A2.6, Column "Total No. of V&V Records" represents a summary of data rejected during V&V and contains both the data used in the WBEU risk characterization as well as the rejected data.
WBEU	EPA	Specific	S9.21	Vol 9	S9.21. Attachment 3, Molybdenum, Section 4.10.2, Spatial Trends: The spatial map for molybdenum does not support the claim that WBEU concentrations reflect variations in naturally occurring molybdenum. The map clearly shows that detected levels of molybdenum above ESLs are located within the IA or in site-impacted areas and are not present in buffer areas. This suggests that elevated concentrations are likely due to site-related contamination. These claims should be modified to indicate that elevated molybdenum concentrations appear to be associated with site-impacted areas and that levels appear to be indicative of contamination.	Attachment 3, Molybdenum: If ECOI levels are higher in historical IHSSs within the EU, then to be conservative, the ECOI is considered a ECOPC regardless of other lines of evidence. If ECOI levels are higher in historical IHSSs outside the EU, then this is not necessarily evidence that the ECOIs are ECOPCs in this EU. In this case, other lines of evidence are considered. No changes will be made to the text.
UWOEU	CDPHE	Specific	10.1	Vol 10	10.1. Executive Summary – The text should also include the cancer risk estimate of 9E-06 for the WRV. This risk estimate is slightly higher than the WRW cancer risk estimate of 8E-06.	Executive Summary: The cancer risk estimate for the WRV was added to the text of the Executive Summary.
UWOEU	CDPHE	Specific	10.2	Vol 10	10.2. Section 4.4. – Human Health Toxicity Assessment – Please note that the provisional inhalation cancer slope factor for benzo(a) pyrene is 3.1 per mg/kg/day (vs. 0.31 per mg/kg/day provided in Table A 4.1.1). This has resulted in the underestimation of potential risk (by 10-fold) through an inhalation exposure pathway. According to the EPA OSWER, it would be appropriate to discuss the uncertainties (i.e., potential underestimation by about 10-fold) associated with the toxicity values for dioxins due to the EPA 2002 reassessment for dioxins (Cancer slope factor of 1E+06 per mg/kg/day).	Section 4.4 Human Health Toxicity Assessment: The provisional inhalation slope factor for benzo(a)pyrene was corrected to 3.1 per mg/kg/day in Table A4.1.1 and risk calculations have been revised using the corrected slope factor. The correction to the slope factor did not result in changes to the overall risk estimate for all exposure pathways (Note: the slope factor value of 0.31 per mg/kg/day was cited in the CRA Methodology). Text will be added to Section 6.4 related to the uncertainties associated with the cancer slope factor for dioxins.
UWOEU	CDPHE	Specific	10.3	Vol 10	Ecological Risk Assessment 10.3. Executive Summary – Please note the following comments: (a) It is not appropriate to state that the ECOPC/receptor pairs were evaluated in the risk characterization using a range of EPCs, exposure scenarios, and toxicity reference values to give a range of risk estimates. This statement should be revised to clarify the use of default assumptions and alternate assumptions for the uncertainty analysis.	Executive Summary, 7th paragraph includes the following text: ECOPC/receptor pairs were evaluated in the risk characterization using conservative default exposure and risk assumptions as defined in the Comprehensive Risk Assessment (CRA) Methodology (DOE 2005). In addition, a refinement of the exposure and risk models based on chemical-specific uncertainties associated with the initial default exposure models was completed for several ECOPC/receptor pairs to provide a refined estimate of potential risk.
UWOEU	CDPHE	Specific	10.3	Vol 10	(b) It is not appropriate to conclude that no significant risks to ecological receptors that may use the UWOEU are predicted. This statement should be revised to indicate "low to potentially significant risks" to capture the full extent of risk estimates using default and alternative assumptions for different receptors and ECOPCs as per Section 10.1 on the interpretation of HQs.	Per the consultative process, the RFCA Parties agree to use the following text in the Executive Summary and in Section 11.3: Based on default and refined calculations, site-related risks are likely to be low to moderate with some high levels of uncertainty for the ecological receptors evaluated in the UWOEU.
UWOEU	CDPHE	Specific	10.4	Vol 10	10.4. Section 10.1.- Chemical Risk Characterization – Please note the following comments on the risk characterization for nickel and di-n-butylphthalate: (a) Risk to the mourning dove (insectivore) from di-n-butylphthalate should be classified as potentially significant (vs. low stated in the text) based on 100 percent of LOAEL HQs between 1 and 5 using the Tier 2 mean EPCs. The highest uncertainty analysis HQ equalled 3 is also important to take into consideration in concluding potentially significant risks.	Section 10.1.13 Chemical Risk Characterization: Based on the uncertainty analysis which discussed the conservatism inherent in the di-n-butylphthalate risk model, the overall conclusion is that the potential for adverse effects are somewhat overestimated. Therefore text will state the potential for adverse effects will be classified as low to moderate.
UWOEU	CDPHE	Specific	10.4	Vol 10	(b) Risk to the deer mouse (insectivore) from nickel should be classified as potentially significant (vs. "likely to be low" stated in the text) based on 96 percent of LOAEL HQs between 1 and 5 and 4 percent between 5 and 10 using the Tier 2 mean EPCs.	Section 10.1.6, Chemical Risk Characterization: Nickel is identified as having the potential for adverse effects using the screening-level default HQs only. When the median BAF or additional TRVs are used, no LOAEL HQs are greater than 1. Therefore, the text will state the potential for adverse effects is likely to be low.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
UWOEU	CDPHE	Specific	10.4	Vol 10	(c) Risk to the PMJM receptor from nickel should be classified as potentially significant (vs. low stated in the text) based on the data presented in Table 10.2.	Section 10.1.6, Chemical Risk Characterization: Nickel is identified as having the potential for adverse effects using the screening-level default HQs only. When the median BAF or additional TRVs are used, no LOAEL HQs are greater than 1. Therefore, the text will state the potential for adverse effects is likely to be low.
UWOEU	CDPHE	Specific	10.4	Vol 10	(d) It is not appropriate to downplay the site-specific potentially significant risks for PMJM and non-PMJM receptors from nickel based on the background risks. It is appropriate to characterize background risks to facilitate risk management decision-making but background risks should not be used to demonstrate overestimation of risk in the uncertainty analysis. For example, background risks could be higher as a result of contamination from other sources.	Section 10.1.6: Background risks will be presented for comparative purposes only. This comparison will not be used to demonstrate overestimation of UWOEU risks.
UWOEU	CDPHE	Specific	10.5	Vol 10	10.5. Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.3.1 Uncertainties Associated with Data Adequacy and Quality, will provide a brief summary and refer back to Section 1.2 for detailed information.  Section 10.3.3. Uncertainties Associated with Eliminating Ecological Contaminants of Interest Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say "unlikely to result in risk concerns for ecological receptors and are well within regional background levels."  Section 10.4 Summary of Significant Sources of Uncertainty, the following text will be added: While some of the general sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.
UWOEU	CDPHE	Specific	10.6	Vol 10	10.6. Section 11.2- Summary and Conclusions – The overall conclusions are too broad to capture the full extent of potential risks based on default HQs and uncertainty analysis HQs. Please revise this section to conclude low to potentially significant risks (vs. "low risks" stated in the text). Also, it is important to discuss the limitation of wildlife biomonitoring studies that they did not address small home range animals.	Note: Section 11.2 became Section 11.3.  Section 11.3 Summary and Conclusions for Ecological Risk: This section will be revised to provide more detail on the results of the risk characterization. In particular, ECOPC/receptor pairs that had LOAEL HQs greater than 1 using the default assumptions are discussed in more detail in the revised conclusions.  Limitations of wildlife biomonitoring studies will be addressed in Section 10.2 and includes the following text: Although a comprehensive compilation of monitoring results has not been presented, the annual reports of the monitoring program provide localized information and insights on the general health of the RFETS ecosystem.
UWOEU	CDPHE	Specific	10.7	Vol 10	Attachment 3:10.7. Section 4.0- Professional Judgment - Background Comparisons – Please revise background comparison discussions in accordance with the above comment # 4.5.	Attachment 3, Section 4.0 Professional Judgment: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
UWOEU	CDPHE	Specific	10.8	Vol 10	10.8. Section 4.0- Professional Judgment – Elimination of ECOIs as ECOPCs – Based on the professional judgment evaluation using spatial trends, process knowledge, statistical background comparisons, and/or log-probability plots, molybdenum should be carried forward into the risk characterization step.	Attachment 3, Section 4.0 Professional Judgment: No additional ECOPCs will be added to the UWOEU per the agency meeting on 4/12/06.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
UWOEU	EPA	Specific	S10.1	Vol 10	SPECIFIC COMMENTS FOR VOLUME 10, UPPER WOMAN DRAINAGE EU S10.1. Page 2, Section 1.1.1, Exposure Unit Characterization and Location: The description does not accurately describe the current configuration of the South Interceptor Ditch (SID). For example, it is indicated that the SID "effectively captures all runoff from the IA", however, as indicated in a subsequent section, a portion of the SID was eliminated as part of the design for remedy at the Original Landfill. Please revise to indicate that the SID was "originally designed to effectively capture all runoff from the IA".	Section 1.1.1, Exposure Unit Characterization and Location: The text will be revised as suggested.
UWOEU	EPA	Specific	S10.2	Vol 10	S10.2. Page 3, Section 1.1.2, Topography and Surface Water Hydrology: It is not clear whether the text is describing the hydrology based on the current configuration of the SID. The description of the SID should be expanded to describe where the SID begins and ends, the total length of the SID, and whether it still functions to capture runoff from the IA. Please also clarify the text to describe whether water is expected to flow in the SID, and if so, the volume that is expected in the SID.	This information is available in Section 2.5.3.1 Physical Characteristics of the Study Area, Surface Water Hydrology, Woman Creek, SID; of the RI/FS Report. Therefore no changes will be made to the text in Section 1.1.2, Topography and Surface Water Hydrology.
UWOEU	EPA	Specific	S10.3	Vol 10	S10.3. Page 4, Section 1.1.4, PMJM Habitat: Upon review of Figure 1.5, there are four PMJM habitat patches (Patch #19, 20, 21, 22) located in the UWOEU, yet the text only provides a discussion of patches #19, 20, and 21. According to CRA Volume 2, patch #22 is addressed in the Lower Woman Drainage EU (LWOEU) report. The text should be modified to include a sentence which clarifies that patch #22, while partially located within the UWOEU, is evaluated as part of the LWOEU.	Section 1.1.4, PMJM Habitat: The text will be revised as suggested.
UWOEU	EPA	Specific	S10.4	Vol 10	S10.4. Page 5, Section 1.1.5, Data Description: The data used in the risk assessment is not clearly defined. For example, the text refers to Figure 1.6 and Tables 1.3 through 1.7. Table 1.5 indicates that there are 10 "results" for dioxins, but it is not clear which locations were analyzed for dioxins. Appendix A, Volume 2, Attachment 3, Figure A3.8 suggests there were two soil locations in this EU. It is not clear why there would be 10 results for two soil locations. Please clarify the data description for this and other analyte groups (as indicated in the General Comments).	Section 1.1.5, Data Description: Table A3.49 in UWOEU Attachment 3 and Table 1.5 in UWOEU main text both indicate 10 samples were collected and analyzed for dioxins. These 10 samples were collected at 10 locations in the area of the historical IHSS SW-133.5, the Incinerator Facility, and are represented on Figure A3.8. Due to their close proximity to each other and the scale of all the figures, this is not easily discernable on this Figure. The information as presented is correct, therefore no changes will be made to the text, tables or figures. For additional information regarding historical IHSS SW-133.5, see Appendix B, Historical Release Report.
UWOEU	EPA	Specific	S10.5	Vol 10	S10.5. Page 18, Section 7.2.2, Surface Soil Detection Frequency: The text states that population-level risk from a single detection of DDT, dieldrin, and endrin ketone above the ESL are highly unlikely. However, the text makes no mention that the detection limits achieved for these chemicals for the non-detect samples were inadequate to assess potential ecological risks. As seen in Attachment 1, all of the reported detection limits for DDT and endrin ketone, and all but one of the reported detection limits for DDT, were above their respective ESLs. As noted in the general comments above, any chemical with a low detection frequency but an inadequate detection limit should be identified as a source of uncertainty, and the text should not state that this chemical is not of concern.	Section 7.2.2, Surface Soil Detection Frequency: The conclusions regarding the adequacy of the detection limits for DDT and endrin ketone will be added to the text.
UWOEU	EPA	Specific	S10.6	Vol 10	S10.6. Page 26, Section 10: In several places within this section, the text states that HQs or risks were estimated using a "range of EPCs". Only one type of EPC (i.e., UTL for small home range, UCL for large home range) was utilized in the calculation of HQs. Therefore, the text should be revised to describe more clearly how EPCs were derived for different receptor groups.	Section 10: The text will be revised so that the term "range of EPCs" is no longer used.
UWOEU	EPA	Specific	S10.7	Vol 10	S10.7. Page 36, Section 10.1.6, Nickel, Non-PMJM, 3rd full paragraph, last sentence: The text states that "HQ calculations for the deer mouse (insectivore)...are not different from those predicted at background concentrations." As seen in Table 7.4, nickel concentrations in UWOEU surface soil were found to be statistically higher than background ( $p = 0.00054$ ). Therefore, it is not appropriate to make statements that site concentrations, and hence HQs, are not different from background. This sentence should be removed.	Section 10.1.6, Nickel, Non-PMJM: The text will be revised so that the statement of concern is no longer included in the background discussion.
UWOEU	EPA	Specific	S10.8	Vol 10	S10.8. Page 38, Section 10.1.6, Nickel, PMJM, last paragraph, first sentence: The text states that "risks to PMJM in UWOEU do not appear to be elevated above background concentrations." As seen in Table 7.5, nickel concentrations in UWOEU surface soil in PMJM habitat were found to be statistically higher than background ( $p = 0.0009$ ). Therefore, it is not appropriate to make statements that site concentrations, and hence HQs, are not elevated relative to background. This sentence should be removed.	Section 10.1.6, Nickel, PMJM: The text will be revised so that the statement of concern is no longer included in the background discussion.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
UWOEU	EPA	Specific	S10.9	Vol 10	S10.9. Page 40, Section 10.1.9, Uranium, Terrestrial Plants, 2nd to last sentence: This sentence is confusing as written because HQs calculated using the LOEC ESL are referred to as "NOAEL HQs". LOEC ESLs should not be interpreted as an "alternative TRV" for a NOEC ESL. Recommend revising this sentence as follows: "Tier 1 HQs were greater than 1 based on both the NOEC and LOEC ESLs. However, the Tier 2 HQ was equal to 1 based on the NOEC ESL and less than 1 based on the LOEC ESL."	Section 10.1.9, Uranium, Terrestrial Plants: The text will be revised so that the statement of concern is no longer included in the background discussion.
UWOEU	EPA	Specific	S10.10	Vol 10	S10.10. Table 10.1: In this table, the TEQ Tier 2 are listed as "Not Calculated" but footnote 'a' is not provided. Revise this table to include footnote 'a'.	Table 10.1: Footnote "a" will be added to Table 10.1.
UWOEU	EPA	Specific	S10.11	Vol 10	S10.11. Table 10.2: The second page of this table is missing the column headers. Revise this table to repeat the headers on page 2 of 2.	Table 10.2 the requested change will be made to the table.
UWOEU	EPA	Specific	S10.12	Vol 10	S10.12. Attachment 1, Table A1.3 and A1.4: These tables compare detection limits to ecological screening levels (ESLs) not human health preliminary remediation goals (PRGs). Therefore, the table footnote should be revised to indicate that boldface text identifies ECOIs with "Maximum results greater than the ESL".	Attachment 1, Table A1.3 and A1.4: The table footnote will be deleted because the tables will indicate the percent of reported results greater than the PRG or ESL, as appropriate.
UWOEU	EPA	Specific	S10.13	Vol 10	S10.13. Attachment 3, Di-n-butylphthalate, Section 4.8.2, Spatial Trends (page 17): The statement that "detections occur randomly throughout the UWOEU" is not supported. Inspection of Figure A3.4.5 shows that detections of di-n-butylphthalate above the ESL occur only in IHSSs located in the northern portion of the EU. This statement should be revised accordingly.	Attachment 3, Section 4.8.2, Di-n-butylphthalate, Spatial Trends: The text will be revised as suggested.
UWOEU	EPA	Specific	S10.14	Vol 10	S10.14. Attachment 3, Molybdenum, Section 4.11.2, Spatial Trends (page 19): The spatial trends conclusions presented for Non-PMJM receptors ("reflect variations in naturally occurring molybdenum") and PMJM receptors ("concentrations...are elevated ear [sic] historical IHSSs") are internally inconsistent. Upon inspection of the spatial trends map presented in CRA Volume 2 (Attachment 8, Figure A8.20), it appears that detected concentrations of molybdenum tend to be located near IHSSs and site-impacted areas. Therefore, the conclusion presented for Non-PMJM receptors should be revised to be similar to the PMJM text. In addition, because molybdenum appears to be elevated in IHSSs, it should be retained as an ECOPC for Non-PMJM receptors.	Attachment 3, Section 4.11.2, Molybdenum, Spatial Trends: In Volume 2, Attachment 8, it is noted that molybdenum concentrations greater than the ESL in PMJM habitat occur near historical IHSSs in the UWOEU. However, what is not stated in the text is that molybdenum concentrations in UWOEU as well as RCEU also occur in locations remote from IHSSs. The text of Volume 2, Attachment 8 will be revised to note this observation and indicate, like non-PMJM, concentrations in PMJM habitat appear to be variations in naturally occurring molybdenum in the RCEU and UWOEU. This will make the non-PMJM and PMJM discussions in Section 4.11.2 consistent. However, Section 4.11.2 will be revised to indicate that molybdenum is being carried forward as a PMJM ECOPC to be conservative, recognizing that there are several concentrations above the ESL that are located in PMJM habitat.
UWOEU	EPA	Specific	S10.15	Vol 10	Specific Comments Identified Previously (August 24, 2005) that Have Not Been Addressed S10.15. Volume 10, Attachment 3, Boron, Probability Plot (current page 14): It is not agreed that the log probability plot "shows the presence of a single population (Figure A3.4.4), which is indicative of background conditions". As previously noted, log-probability plots have very low power to detect mixed data sets. Upon review of the log probability plot, the dataset does not appear to plot as a single straight line. This claim should either be deleted or else modified to indicate that the data are too limited to draw a reliable conclusion about the nature of the distribution.	Attachment 3, Section 4.5.3, Boron, Probability Plot: The data show a reasonable fit to a straight line. However, the first occurrence of the word "background" will be deleted so that the statement reads that the distribution suggests background conditions. Footnote 2 of Attachment 3 provides a caveat on the ability of log-probability plots to detect two populations.
UWOEU	EPA	Specific	S10.16	Vol 10	S10.16. Volume 10, Attachment 3, Molybdenum, Process Knowledge (current page 19): The process knowledge information (provided in CRA Volume 2) states that molybdenum compounds used in site buildings would have been filtered out of the air leaving these buildings by HEPA filters. However, inspection of the spatial trends map shows that elevated levels of molybdenum in surface soil occur most frequency in the IA and other site-impacted locations. Please revise the process knowledge and spatial trend sections accordingly to address this apparent inconsistency.	Attachment 3, Section 4.11.1, Molybdenum, Process Knowledge: In Volume 2, Attachment 8, the process knowledge information is accurately presented and should not be qualified based on another line of evidence. The spatial trend analysis currently indicates high concentrations of molybdenum occur in the IAEU, NNEU, and UWNEU, and therefore, molybdenum will be evaluated in the risk characterizations for these EUs. Molybdenum concentrations in the other EUs reflect variations in naturally occurring molybdenum, which is accurately presented in Volume 10, Attachment 3. No change will be made to the text.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
UWOEU	EPA	Specific	S10.17	Vol 10	S10.17. Volume 10, Attachment 3, Molybdenum, Probability Plot (current page 20): It is not agreed that the log probability plot "shows the presence of a single population (Figure A3.4.9), which is indicative of background conditions". However, an evaluation of a data set that is highly censored with multiple detection limits is extremely complex and the use of a simplistic log-probability plot is of limited use. This claim should either be deleted or else modified to indicate that the data are too limited to draw a reliable conclusion about the nature of the distribution. NOTE: The current text incorrectly references Figure A3.4.8, and should be changed to cite Figure A3.4.9.	Attachment 3, Molybdenum, Probability Plot: The text will be revised as suggested. The reference to the figure will be changed to Figure A3.4.9.
UWOEU	EPA	Specific	S10.18	Vol 10	S10.18. Volume 10, Attachment 5, Silver, Plant Toxicity (current page 10): The alternate TRV selected is the soil screening benchmark from the EPA Region 5 Ecological Screening Levels (ESLs). The soil ESLs presented in this report represent the "lowest receptor-specific ESL for either plants, invertebrates, or mammals" (EPA 1999). Based on a review of the August 2003 EPA Region 5 ESL table[5], the basis of the soil ESL for silver is not reported. Therefore, unless it is known that this ESL incorporated data on phytotoxicity, it is not appropriate to use this ESL as an alternate TRV for plants.	Attachment 5, Section 1.7 Silver, Plant Toxicity: The plant toxicity section for silver will be revised to reflect the concerns of this comment.
UWOEU	EPA	Specific	S10.19	Vol 10	S10.19. Volume 10, Attachment 5, Uranium & Vanadium, Plant Toxicity (current page 12): The proposed LOEC ESL should not be thought of as an alternate TRV for the NOEC ESL. The NOEC is based on a no effect level and the LOEC is based on an effect level. The term 'alternate' suggests that one ESL is given preference over the other, however, both TRVs have relevance are used in estimating potential risks. Please avoid using this terminology or clarify its use in the report.	Attachment 5, Sections 1.9 Uranium and 1.10 Vanadium, Plant Toxicity: The plant toxicity sections for uranium and vanadium will be revised to reflect the concerns of this comment.
LWOEU	CDPHE	Specific	11.1	Vol 11	11.1. Executive Summary – Please note the following comments: (a) It is not appropriate to state that the ECOPC/receptor pairs were evaluated in the risk characterization using a range of EPCs, exposure scenarios, and toxicity reference values to give a range of risk estimates. This statement should be revised to clarify the use of default assumptions and alternate assumptions for the uncertainty analysis.	Executive Summary, 4th paragraph includes the following text: ECOPC/receptor pairs were evaluated in the risk characterization using default exposure and risk assumptions as defined in the Comprehensive Risk Assessment (CRA) Methodology (DOE 2005). In addition, a refinement of the exposure and risk models based on chemical-specific uncertainties associated with the initial default exposure models were completed for several ECOPC/receptor pairs to provide a refined estimate of potential risk.
LWOEU	CDPHE	Specific		Vol 11	(b) It is not appropriate to conclude that no significant risks to wildlife receptors that may use the LWOEU are predicted. This statement should be revised to indicate "low to potentially significant risks" to capture the full extent of risk estimates using default and alternative assumptions for different receptors and ECOPCs as per Section 10.1 on the interpretation of HQs.	Per the consultative process, the RFCA Parties agree to use the following text in the Executive Summary and in Section 11.3: Based on default and refined calculations, site-related risks are likely to be low for the ecological receptors evaluated in the LWOEU.
LWOEU	CDPHE	Specific	11.2	Vol 11	11.2. Section 10.1.- Chemical Risk Characterization – Please note the following comments on the risk characterization for chromium and nickel:	No response necessary.
LWOEU	CDPHE	Specific	11.2	Vol 11	(a) Risk to the mourning dove (insectivore) from chromium should be classified as potentially significant (vs. low to moderate stated in the text) based on 100 percent of LOAEL HQs between 1 and 5 using the Tier 2 mean EPCs.	Section 10.1 Chemical Risk Characterization: There are no Tier 2 mean EPCs used. Tier 2 EPCs specific to the mourning dove insectivore receptor are UTLs. Only screening-level HQs using the default risk model are greater than 1. When the median BAF is used, as recommended by USEPA Eco-SSL guidance, no LOAEL HQs are greater than 1 using either Tier 1 or Tier 2 statistics indicating that the potential for adverse effects are likely to be low.
LWOEU	CDPHE	Specific	11.2	Vol 11	(b) Risk to the deer mouse (insectivore) from nickel should be classified as potentially significant (vs. "likely to be low" stated in the text) based on 92 percent of LOAEL HQs between 1 and 5 and 8 percent between 5 and 10 using the Tier 2 mean EPCs.	Section 10.1 Chemical Risk Characterization: There are no Tier 2 mean EPCs used. Tier 2 EPCs specific to the deer mouse insectivore receptor are UTLs. Only screening-level HQs using the default risk model are greater than 1. When the median BAF or additional TRVs are used, as recommended by USEPA Eco-SSL guidance, no LOAEL HQs are greater than 1 using either Tier 1 or Tier 2 statistics indicating that the potential for adverse effects are likely to be low.
LWOEU	CDPHE	Specific	11.2	Vol 11	(c) Risk to the PMJM receptor from nickel should be classified as potentially significant (vs. low to potentially significant) based on the data presented in Table 10.2.	Section 10.1 Chemical Risk Characterization: Only screening-level HQs using the default risk model are greater than 1. When the median BAF or additional TRVs are used, as recommended by USEPA Eco-SSL guidance, no LOAEL HQs are greater than 1 using either Tier 1 or Tier 2 statistics indicating that the potential for adverse effects are likely to be low.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
LWOEU	CDPHE	Specific	11.2	Vol 11	(d) It is not appropriate to downplay the site-specific potentially significant risks for any receptor from nickel or chromium based on the background risks. It is appropriate to characterize background risks to facilitate risk management decision-making but background risks should not be used to demonstrate overestimation of risk in the uncertainty analysis. For example, background risks could be higher as a result of contamination from other sources.	Section 10.1 Chemical Risk Characterization: Background risks will be presented for comparative purposes only. Background will not be used to demonstrate overestimation of LWOEU risks.
LWOEU	CDPHE	Specific	11.3	Vol 11	11.3.Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	<p>Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.3.1 Uncertainties Associated with Data Adequacy and Quality, will provide a brief summary and refer back to Section 1.2 for detailed information.</p> <p>Section 10.3.3. Uncertainties Associated with Eliminating of Ecological Contaminants of Interest Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say "unlikely to result in risk concerns for ecological receptors and are well within regional background levels."</p> <p>Section 10.4 Summary of Significant Sources of Uncertainty, the following text will be added: While some of the general sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.</p>
LWOEU	CDPHE	Specific	11.4	Vol 11	11.4.Section 11.2- Summary and Conclusions – The overall conclusions are too broad to capture the full extent of potential risks based on default HQs and uncertainty analysis HQs. Please revise this section to conclude low to potentially significant risks (vs. "low risks" stated in the text). Also, it is important to discuss the limitation of wildlife biomonitoring studies that they did not address small home range animals.	<p>Note: Section 11.2 became Section 11.3.</p> <p>Section 11.3 Summary and Conclusions for Ecological Risk: This section will be revised to provide more detail on the results of the risk characterization. In particular, ECOPC/receptor pairs that had LOAEL HQs greater than 1 using the default assumptions are discussed in more detail in the revised conclusions.</p> <p>Limitations of wildlife biomonitoring studies will be addressed in Section 10.2 and includes the following text: Although a comprehensive compilation of monitoring results has not been presented, the annual reports of the monitoring program provide localized information and insights on the general health of the RFETS ecosystem.</p>
LWOEU	CDPHE	Specific	11.5	Vol 11	Attachment 3:11.5.Section 4.0- Professional Judgment -Background Comparisons – Please revise background comparison discussions in accordance with the above comment # 4.5.	Note: This response is based on the response to Comment Number 4.6. Attachment 3, Section 4.0: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
LWOEU	CDPHE	Specific	11.6	Vol 11	11.6.Section 4.0- Professional Judgment – Elimination of ECOIs as ECOPCs – Please note the following comments:	No response necessary.
LWOEU	CDPHE	Specific	11.6	Vol 11	a) Based on the professional judgment evaluation using spatial trends, process knowledge, statistical background comparisons, and/or log-probability plots, antimony should be carried forward into the risk characterization step.	Attachment 3, Section 4.0 Professional Judgment: No additional ECOPCs will be added to the LWOEU per the agency meeting on 4/12/06.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
LWOEU	CDPHE	Specific	11.6	Vol 11	b) Discussions of process knowledge, spatial trends, background comparisons, and log-probability plots for several ECOLs (e.g., antimony, manganese, and zinc) should be revised to present accurate information.	The professional judgment sections will be reviewed and revised as needed.
LWOEU	CDPHE	Specific	11.6	Vol 11	c) Log-probability plots are given too much weight and the limited power of this approach to detect the occurrence of two populations is not taken into consideration. Please note that the statistical comparison to the RFETS background provides the highest weight-of-evidence.	The log-probability plots are only one line of evidence and are not given any additional weight relative to other lines of evidence. Text related to probability plots will be reviewed and revised if appropriate for accuracy.
LWOEU	EPA	Specific	S11.1	Vol 11	SPECIFIC COMMENTS FOR VOLUME 11, LOWER WOMAN DRAINAGE EU S11.1. Page 9, Section 1.2, Data Adequacy for PMJM: As noted in the data adequacy evaluation for the LWOEU (provided in Volume 2, Attachment 3, page 28), existing surface soil data did not meet data adequacy guidelines for metals and organics in most PMJM patches within the LWOEU. Because of this data limitation, the LWOEU uncertainty analysis for PMJM was to “document the greater reliability of patch #23 findings and their applicability to the other patches in the EU.” However, the LWOEU volume makes no mention of this data limitation and the risk assessment does not include a discussion of the reliability and applicability of predicted risks in patch #23 to other PMJM habitat areas with sparse data. The PMJM-specific sections on data adequacy, risk conclusions, and assessment uncertainties should be revised to include a discussion of the reliability and applicability of potential risks across PMJM habitat areas within the LWOEU. In addition, the data adequacy evaluation asserts that, because organic chemical concentrations were non-detect in available LWOEU samples and in nearby EUs, “organics are not likely to be of concern”. However, this line of evidence is only true if the detection limits for organic chemicals were adequate to assess potential ecological risks. The data adequacy evaluation (Volume 2, Attachment 3 and the EU-specific Section 1.2) should be revised to address and discuss whether the detection limits achieved for organics in surface soil samples were adequate to characterize ecological risks.	The PMJM-specific sections on Data Adequacy (Section 1.2), Summary and Conclusions (Section 11.1), and Uncertainties Associated with Data Adequacy and Quality (Section 10.3.1) will be revised to document that data did not meet data adequacy guidelines for metals and organics in most PMJM patches within the LWOEU, and to discuss the greater reliability of patch #23 findings and their applicability to the other patches in the EU. The data adequacy evaluation (Section 1.2) will be revised to address and discuss whether the detection limits achieved for organics in surface soil samples were adequate to characterize ecological risks. A general discussion of the adequacy of detection limits will be added to Volume 2, Attachment 3.
LWOEU	EPA	Specific	S11.2	Vol 11	S11.2. Page 16, Section 7.1, last paragraph, PMJM Samples: The text states the “LWOEU has 40 sample locations occurring in PMJM habitat”. However, Table 1.2 and Table 1.6 indicate up to 45 samples in PMJM habitat, depending upon the analyte group. This discrepancy should be rectified and any impacted tables, figures, calculations should be revised.	Section 7.1 Data Used in the Ecological Risk Assessment, last paragraph, 1st sentence, the following text will be revised as follows: As described in Section 1.1.4, there are 45 sample locations occurring in PMJM habitat within the LWOEU. Some of the sample locations are located in adjacent EUs but were considered a part of the PMJM habitat for the LWOEU (see Figure 1.5). Surface soil samples were collected and analyzed for inorganics (45 samples), organics (2 samples), and radionuclides (41 samples).
LWOEU	EPA	Specific	S11.3	Vol 11	S11.3. Page 32, Section 10.1.4, Nickel, HQs Calculated to Characterize Uncertainty, 2nd paragraph, last sentence: Revise this sentence as follows: “...using both median BAFs and alternative TRVs...”.	Section 10.1.4 Nickel, HQs Calculated to Characterize Uncertainty, 2nd paragraph, 2nd to last sentence will be revised as follows: For this reason, refined HQs were calculated for the PMJM using both median BAFs and the additional TRVs. presented in the uncertainty analysis.
LWOEU	EPA	Specific	S11.4	Vol 11	S11.4. Page 34, Section 10.1.4, Nickel, Non-PMJM, 4th paragraph, last sentence: The text states that risk estimates for the deer mouse (insectivore) are “not different from those predicted at background concentrations”. However, nickel concentrations in the LWOEU were determined to be statistically higher than the RFETS background and a review of the box plot for nickel (presented in Attachment 3) shows that, while the distributions overlap, the LWOEU data set contains several samples that are clearly shifted above the RFETS background data set. Therefore, statements to the effect that the two datasets are equal (i.e., “the same”, “not different”) should be removed.	Section 10.1.4 Nickel, Non-PMJM Receptors-Small Home Range, 4th paragraph: The text will be revised to reflect the concerns of this comment.
LWOEU	EPA	Specific	S11.5	Vol 11	S11.5. Page 35, Section 10.1.4, Nickel, PMJM, 2nd to last paragraph: The text states that “no LOAEL HQs greater than 1 were calculated in any patch for the PMJM using the median soil-to-invertebrate BAF and the default LOAEL TRV”. However, Table 10.2 shows that in patch #27 the LOAEL HQ is 2 based on the alternate BAF and default LOAEL TRV. This section should be revised accordingly.	Section 10.1.4 Nickel, PMJM Receptor, 4th paragraph: The text will be clarified to address the concerns of this comment.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
LWOEU	EPA	Specific	S11.6	Vol 11	S11.6. Page 38, Section 10.1.8, Vanadium, HQs Calculated to Characterize Uncertainty, 3rd paragraph: The text states that “for PMJM, no NOAEL or LOAEL HQs greater than 1 were calculated in Patch #23 using default HQ calculations”. However, Table 10.2 shows that in patches #22 and #23 the NOAEL HQs are 2 based on the default BAF and default TRV. This section should be revised accordingly.	Section 10.1.8 Vanadium, HQs Calculated to Characterize Uncertainty, 3rd paragraph: The text will be revised to show that NOAEL HQs for all five patches equal 2.
LWOEU	EPA	Specific	S11.7	Vol 11	S11.7. Page 39, Section 10.1.8, Vanadium, Terrestrial Plants, 2nd paragraph: The text correctly states that “the uncertainty assessment recommended the use of an alternate LOEC value (50 mg/kg)”. However, Table 10.1 shows that no LOEC was available. Table 10.1 should be revised to present the HQ values based on the alternate LOEC as shown in Attachment 4, Table A4.2.30.	Section 10.1.8 Vanadium, Terrestrial Plants: Table 10.1 will be revised to include an additional plant LOEC for vanadium.
LWOEU	EPA	Specific	S11.8	Vol 11	S11.8. Page 40, Section 10.1.8, Vanadium, PMJM, 2nd to last paragraph: The text incorrectly states that “HQs were calculated in the uncertainty analysis using [default] TRVs...and median BAFs”. As seen in Table 10.2 and Attachment 4, it was not necessary to calculate HQs using median BAFs because no LOAEL HQs were above 1 based on the default BAFs. This entire paragraph should be removed.	Section 10.1.8 Vanadium, PMJM Receptors: The text will be revised as suggested in this comment.
LWOEU	EPA	Specific	S11.9	Vol 11	S11.9. Table 10.1: Page 1 of 6 (which provides chromium HQs for terrestrial plants, terrestrial invertebrates, and the mourning dove) was not included in any of the duplicate copies of this volume. Ensure that all pages are included in subsequent deliverables.	Comment noted.
LWOEU	EPA	Specific	S11.10	Vol 11	S11.10. Volume 11, Attachment 3, Comparison to RFETS Background (pages 1-5): For most metals, this section has been revised (from previous pre-draft versions) to remove any statements that draw conclusions about the similarity/dissimilarity of the site and RFETS background soil datasets based on the box and whisker plots. As written, the chemical-specific sections only provide a text summary of the site and RFETS background data set statistics without any interpretation of their meaning. In order to be a meaningful line of evidence, each chemical-specific section should be revised to discuss the degree of overlap between the two distributions and an evaluation of whether the difference is or is not likely to be of ecological significance.	The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
LWOEU	EPA	Specific	S11.11	Vol 11	S11.11. Volume 11, Attachment 3, Process Knowledge (page 10): As noted in the general comments above, the Professional Judgment sections for several ECOIs present process knowledge conclusions that do not accurately summarize the information presented in CRA Volume 2. In particular, CRA Volume 2 specifically identifies the LWOEU as a potential EU where arsenic contamination could be present due to activities at the East Firing Range (IHSS SE-1602). The Process Knowledge sections for these ECOIs should be revised to present an accurate and more consistent summary of the process knowledge in the LWOEU.	Attachment 3, Section 4.3.1 will be revised to indicate that process knowledge suggests arsenic may be present in LWOEU soil as a result of historical site-related activities. Review of the other process knowledge sections indicates that minor revisions are required and will be made.
LWOEU	EPA	Specific	S11.12	Vol 11	S11.12. Volume 11, Attachment 3, Spatial Trends (pages 9-23): The conclusion that RFETS surface soil concentrations appear to reflect naturally occurring conditions for several metals is not supported by a review of the spatial trends maps provided in CRA Volume 2 (e.g., antimony, manganese, zinc). The spatial trends conclusions for the ECOIs listed above should be revised to accurately summarize the information presented in the spatial trends maps in CRA Volume 2.	Attachment 3, Spatial Trends: If ECOI levels are higher in historical IHSSs within the EU, then to be conservative, the ECOI is considered a ECOPC regardless of other lines of evidence. If ECOI levels are higher in historical IHSSs outside the EU, then this is not necessarily evidence that the ECOIs are ECOPCs in this EU. In this case, other lines of evidence are considered. No changes will be made to the text.
LWOEU	EPA	Specific	S11.13	Vol 11	S11.13. Volume 11, Attachment 3, Antimony, Section 4.2.6, Conclusion (page 10): The conclusion to exclude antimony as an ECOPC in the professional judgment is not supported. The process knowledge presented in CRA Volume 2 indicates that antimony may be present in RFETS soils due to site-related activities, and specifically identifies the LWOEU as a potential EU where antimony contamination could be present due to activities as the East Firing Range (IHSS SE-1602). In addition, inspection of the spatial trends maps indicates that detected concentrations of antimony are often located in areas that have been impacted by site-related activities. Also, the LWOEU MDC exceeds the range of Colorado and the bordering states. Although not discussed in the text, because of high censoring, the LWOEU data set was too limited to create meaningful log probability plots or perform statistical comparisons with RFETS background. The risk potential section shows that the surface soil EPC exceeded ESLs for three receptors, the subsurface soil EPC exceeded the prairie dog ESL, and that the detection limits achieved for several	Attachment 3, Section 4.0 Professional Judgment: No additional ECOPCs will be added to the LWOEU per the agency meeting on 4/12/06.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
					samples were inadequate to assess potential risks to the more sensitive ecological receptors. Based on these considerations, antimony should be retained as an ECOPC for both surface and subsurface soil.	
LWOEU	EPA	Specific	S11.14	Vol 11	S11.14. Volume 11, Attachment 3, Lithium, Section 4.7.5, Risk Potential (page 16): In the pre-draft EU (dated July 2005), this section included a discussion of the low confidence in the plant ESL, as assigned by the plant ESL source report (Efroymson et al. 1997), which supported the conclusion that lithium should be excluded as an ECOPC for terrestrial plants. This discussion has been removed in the Draft EU volume. It is recommended that this discussion be added back into the risk potential section for lithium.	Attachment 3, Section 4.7.5 Risk Potential for Plants and Wildlife, the following text will be added: The authors of the document from which the terrestrial plant NOAEL ESL was selected (Efroymson et al. 1997) placed a low confidence rating on the value. Other studies reported in Efroymson et al 1997 report no observed adverse effects at 25 mg/kg, which is greater than the UTL and MDC (22 mg/kg).
LWOEU	EPA	Specific	S11.15	Vol 11	S11.15. Volume 11, Attachment 3, Zinc, Section 4.15.1, Summary of Process Knowledge (page 23): This section incorrectly states that "there are no IHSSs in the LWOEU". As seen in Table 1.1 in the main text, there are five IHSS located within the LWOEU, one of which may be a potential source of metal contamination (East Firing Range). This sentence should be removed.	Attachment 3, Zinc, Section 4.15.1 Summary of Process Knowledge: the sentence will be deleted.
LWOEU	EPA	Specific	S11.16	Vol 11	S11.16. Volume 11, Attachment 3, Zinc, Evaluation of Spatial Trends (page 23): The spatial trends conclusions presented for Non-PMJM receptors ("reflect variations in naturally occurring zinc") and PMJM receptors ("elevated zinc concentrations...are located near historical IHSSs") are internally inconsistent. Upon inspection of the spatial trends map presented in CRA Volume 2, it appears that detected concentrations of zinc tend to be located near IHSSs and site-impacted areas. Therefore, the conclusion presented for Non-PMJM receptors should be revised to be similar to the PMJM text. In addition, because zinc appears to be elevated in IHSSs, it should be retained as an ECOPC for Non-PMJM receptors.	In Volume 2, Attachment 8, Section 4.15.2 Evaluation of Spatial Trends: It is noted that zinc concentrations greater than the background MDC in PMJM habitat occur near IHSSs in the NNEU, LWOEU, UWOEU, and UWNEU. However, what is not stated in the text is that the concentrations in the NNEU, UWOEU, and UWNEU are greater than three time the background MDC, but only greater than the background MDC for LWOEU. Furthermore, there are concentrations outside of the IHSSs in the LWOEU that have similar concentrations to those in the IHSSs. The text of Volume 2 Attachment 8 will be revised to indicate that zinc will be evaluated in the risk characterization for NNEU, UWOEU, and UWNEU, but is naturally occurring in the LWOEU. This will make the non-PMJM and PMJM discussions consistent in Section 4.15.2 consistent. However, Section 4.15.2 will be revised to indicate that zinc is being carried forward as a PMJM ECOPC to be conservative, recognizing that the above background concentrations are all located in PMJM habitat.
LWOEU	EPA	Specific	S11.17	Vol 11	S11.17. Volume 11, Attachment 4, Table A.4.2.4: The units for terrestrial plant TRVs are concentration-based (mg/kg soil), not dose-based (mg/kg BW/d). The column header for the terrestrial plant TRV should be revised accordingly.	Attachment 4, Table A4.2.4, the requested change will be made to the table.
LWOEU	EPA	Specific	S11.18	Vol 11	S11.18. Volume 11, Attachment 4, Table A.4.2.32: The units for wildlife TRVs are dose-based (mg/kg BW/d), not concentration-based (mg/kg soil). The column header for the wildlife TRV should be revised accordingly.	Attachment 4, Table 4.2.32: the units for the plant TRV are correct in this table. Therefore no changes to the table are needed.
LWOEU	EPA	Specific	S11.19	Vol 11	S11.19. Volume 11, Attachment 5, Chromium, TRVs (page 2): The discussions for terrestrial plant and invertebrate TRVs should be moved into their own sections titled "Plant Toxicity" and "Terrestrial Invertebrate Toxicity" (see similar sections in Thallium and Vanadium sections).	Attachment 5, Section 1.1 Chromium, new subsections will be created as follows: Plant Toxicity and Invertebrate Toxicity.
LWOEU	EPA	Specific	S11.20	Vol 11	S11.20. Volume 11, Attachment 5, Selenium, Background Risks (page 9): This section incorrectly references manganese rather than selenium. In addition, the text appears to be nearly identical to that presented in the manganese section on background risks. Upon review of the Background Risk Characterization for selenium (CRA Volume 2, Attachment 9, Table A.9.35), background HQs do not exceed 1 for even the most sensitive receptor (PMJM). This section should be revised to accurately present the background HQ for selenium as presented in CRA Volume 2.	Attachment 5, Section 1.5 Selenium, Background Risks, the requested changes will be made to the text.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
LWOEU	EPA	Specific	S11.21	Vol 11	S11.21. Volume 11, Attachment 5, Vanadium, BAFs (page 11): The text incorrectly states that "the median BAFs...were used as alternate BAFs to estimate invertebrate and plant tissue concentrations". As seen in Table 10.2 and Attachment 4, it was not necessary to calculate HQs using median BAFs because no LOAEL HQs were above 1 based on the default BAFs. The last two sentences of this paragraph should be removed.	Attachment 5, Section 1.8 Vanadium, Bioaccumulation Factors, the requested change will be made to the text.
LWOEU	EPA	Specific	S11.22	Vol 11	Specific Comments Identified Previously (Volume 11-July 26, 2005) that Have Not Been Addressed S11.22. Section 1.1.5, Surface Soil/Surface Sediment, 1st paragraph (page 7): Please include a sentence that clarifies that surface soil samples collected as part of the 30-acre grid sampling effort in 2004 were analyzed for radionuclides and metals only.	Section 1.1.5, Data Description, Surface Soil/Surface Sediment, 1st paragraph, a new last sentence will be included as follows: These samples were analyzed for radionuclides and metals only.
LWOEU	EPA	Specific	S11.23	Vol 11	S11.23. Section 1.1.5, Subsurface Soil/Subsurface Sediment, 2nd paragraph, 3rd sentence (page 8): The text states that "dioxins were present at concentrations less than 1 ug/kg in the two samples that were collected, although most of the dioxins were undetected in one of the samples". This sentence is somewhat confusing. First, it is not clear if the value of 1 ug/kg reported is TEQ-based. Second, the second half of this sentence appears to refer to the fact that the dioxin congener results within one of the samples were mostly non-detects. Please revise this sentence accordingly.	Section 1.1.5, Data Description, Subsurface Soil/Subsurface Sediment, 2nd paragraph, the following sentence will be deleted: The dioxins were present at concentrations less than 1 ug/kg in three samples that were collected, although most of the dioxins were undetected in two of the samples.  This sentence will be deleted because it is unclear, and a dioxin discussion is not required here. Dioxins are adequately discussed in the opening paragraph of section 1.1.5.
LWOEU	EPA	Specific	S11.24	Vol 11	S11.24. Section 1.1.5, Dioxin Toxicity Equivalence: The Denver Front Range Dioxin Study of Dioxins in Surface Soil (USEPA 2002)[6] provides information regarding expected levels of dioxins in areas expected to be representative of background conditions. In this report, background levels of dioxins and furans in open space areas had a mean and standard deviation of $1.5 \pm 2.2$ ppt TEQ. It is suggested that these data be used to support a comparison of on-site dioxin levels to background levels.	Section 1.1.5, Dioxin Toxicity Equivalence: The dioxin TEQ concentrations in surface soil/surface sediment were not higher than the PRG, and were not higher than the prairie dog ESL for subsurface soil. Therefore, dioxins are not COCs or ECOPCs, and a discussion of background levels is unnecessary. Note also that references to the dioxin concentrations in Section 1.1.5 will be removed as the discussion is not pertinent to the section. No changes will be made to the text.
LWOEU	EPA	Specific	S11.25	Vol 11	S11.25. Section 7.0, last paragraph (page 15): Please revise this paragraph to include citations to the applicable Contact Records which detail changes to the ECOPC selection flowcharts and PMJM-specific evaluations.	The Contact Records which detail changes to the ECOPC selection flowcharts and PMJM-specific evaluation are included in Revision 1, Final Comprehensive Risk Assessment Work Plan and Methodology, September 2005. Therefore no changes will be made to Section 7 text.
LWOEU	EPA	Specific	S11.26	Vol 11	S11.26. Section 7.2.6, Non-PMJM Receptors, first sentence (page 18): The sentence implies that all "inorganic, organic, and radionuclide surface soil ECOIs...were eliminated from further consideration as ECOPCs". However, several metals were retained as ECOPCs. Recommend changing this sentence as follows: "Most inorganic, organic, and radionuclide surface soil ECOIs..."	Section 7.2.6, Summary of Surface Soil Ecological Contaminants of Potential Concern, Non-PMJM Receptors, 1st paragraph, the 1st sentence will be revised as follows: Most inorganic, organic and radionuclide surface soil ECOIs for non-PMJM receptors in the LWOEU were eliminated from further consideration in the ECOPC identification process...(no changes to the remaining portion of this sentence).
LWOEU	EPA	Specific	S11.27	Vol 11	S11.27. Section 7.2.6, PMJM Receptors (page 19): This paragraph seems to imply that all "ECOIs were removed from further evaluation in the ECOPC identification process". However, several metals were retained as ECOPCs. Recommend changing this sentence as follows: "Most ECOIs were removed from further evaluation in the ECOPC identification process ....".	Section 7.2.6, Summary of Surface Soil Ecological Contaminants of Potential Concern, PMJM Receptors: Most ECOIs were removed from further evaluation in the ECOPC identification process.....(no changes to the remaining portion of this sentence.)
LWOEU	EPA	Specific	S11.28	Vol 11	S11.28. Table 1.2: Please split the row for "Organics" into the following analysis suites: SVOCs, VOCs, PCBs, Pesticides, Herbicides, Dioxins.	The purpose of Table 1.2 is to give the reader a general understanding of the number of inorganic, organic, and radionuclide samples in each medium for a given EU. A more detailed breakdown of organics is provided in the subsequent summary statistics tables. No changes will be made to Table 1.2.
LWOEU	EPA	Specific	S11.29	Vol 11	S11.29. Table 7.10, 7.11, and 7.16: The "ECOPC?" column for ECOIs without ESL should be changed from "No" to "UT".	Analytes with uncertain toxicity (UT) are identified in Tables 7.2, 7.3, and 7.12 and are discussed in Section 10. Therefore, no changes will be made to Tables 7.10, 7.11, and 7.16.
LWOEU	EPA	Specific	S11.30	Vol 11	S11.30. Table 8.3: Figure 1.5 shows a total of 3 sampling locations within PMJM habitat patch #22 and 4 sampling locations within PMJM habitat patch #27, yet the table shows a total number of samples of 2 samples within each of these patches. Please rectify this discrepancy.	Table 8.3: Samples were not always analyzed for a full suite of ECOIs, so the number of samples for a given chemical may be less than the number of sample locations. Therefore, no changes will be made to the table.



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LWOEU	EPA	Specific	S11.31	Vol 11	S11.31. Table 9.2: Please revise this table to include the Eco-SSL TRVs for birds and mammals. Please also provide the bird TRVs for tin.	Table 9.2 presents the default TRVs used in the analysis. Information on Eco-SSLs are provided in Attachment 3 as needed. No changes will be made to the table.
LWOEU	EPA	Specific	S11.32	Vol 11	S11.32. Table 9.2: The column is titled "Lowest Bounded LOAEL", but in many cases it appears that the LOAEL is not a bounded value. Please revise the column name to "LOAEL (mg/kg/day)".	Table 9.2, the requested changes will be made to the table.
LWOEU	EPA	Specific	S11.33	Vol 11	S11.33. Figures 1.6 and 1.7: Please use a different symbol or shading to indicate which sampling locations were only analyzed for radionuclides and metals.	In Volume 2, Attachment 3, figures are provided showing sampling locations for each analyte group (including radionuclides and metals) by medium. Therefore, no changes will be made to Figures 1.6 and 1.7 in Volume 11.
LWOEU	EPA	Specific	S11.34	Vol 11	S11.34. Attachment 3, Antimony, Spatial Trends: It is not agreed that "antimony concentrations appear to be indicative of background concentrations". The text preceding this statement states that most of the locations with elevated antimony concentrations are associated with historical IHSSs. In addition, a review of the spatial distribution maps for antimony shows that there is a clear spatial pattern associated with antimony levels in soil. Elevated levels of antimony are usually located in the IA and in areas that have been potentially impacted by site-related activities. Please revise this paragraph accordingly.	Attachment 3, Section 4.2.2 Antimony, Spatial Trends: As currently discussed in Volume 2, Attachment 8, Section 3.2, elevated antimony concentrations are associated with IHSSs in the IDEU, NNEU, UWNEU, IAEU and UWOEU, and therefore, it cannot be eliminated as an ECOPC. However, as also stated in Attachment 8, Section 3.2, this is not true for the LWOEU, where concentrations appear to reflect variations in naturally occurring antimony. Therefore, no changes will be made to Attachment 3 of Volume 11.
LWOEU	EPA	Specific	S11.35	Vol 11	S11.35. Attachment 3, Antimony, Pattern Recognition, Surface Soil: It is not agreed that the log-probability plot "shows the presence of a single population" (Figure A3.4.2). The log-probability plot appears to show three distinct populations. However, this is likely influenced by low detection frequency (28 of 60 samples were detect, 47%) and the presence of different detection limits. Because of these limitations, it is not appropriate to draw conclusions regarding the presence/absence of a single population. Please revise this paragraph accordingly. This comment also applies to subsurface soil.	Attachment 3, Section 4.2.3 Antimony Pattern Recognition, Surface Soil, the following text will be revised as follows: The log-probability plot (Figure A3.4.2) appears to show three distinct populations, which stems from the low detection frequency (47%) and multiple detection limits in the data set. Because of this limitation, the log-probability plot is inconclusive with regard to the presence of a single background population.
LWOEU	EPA	Specific	S11.36	Vol 11	S11.36. Attachment 5, Section 1.4, Nickel, TRVs: The text concludes that the TRV selected for use in the CRA Methodology is "overly-conservative" based on the comparison of the back-calculated ESL to background levels. However, the back-calculation of an ESL is also based on estimated ingestion rates, assumed bioavailability and dietary fractions, and literature-derived uptake factors. Uncertainties in each of these input parameters contribute, perhaps even more than uncertainties in the TRV, to the fact that the back-calculated ESL is within the range of background concentrations. Please revise this paragraph to include a discussion of the other factors, in addition to the TRV, that increase the uncertainty in the back-calculated ESL.	Section 1.4 Nickel, Toxicity Reference Values, the text will be revised and expanded to reflect the concerns of this comment.
SWEU	CDPHE	Specific	12.1	Vol 12	12.1. Executive Summary - Please revise this section in accordance with the following comments: a) It is important to include a list of ECOIs that were evaluated in the professional judgment evaluation.	Executive Summary, 3rd paragraph will be modified to discuss the ECOIs that were included in the professional judgment evaluation.
SWEU	CDPHE	Specific	12.1	Vol 12	b) The text states risks to ecological receptors are likely to be negligible in this EU because no ECOPCs were identified. This statement cannot be supported by quantitative risk estimates because no risk characterization was performed. Additionally, this statement is too broad to capture the impact of the various screening steps in the selection of ECOPCs as well as the professional judgment evaluation.	The ECOPC selection process is a screening level risk assessment. Screening values are compared to maximum detected concentrations. In the Executive Summary, a new 3rd paragraph will be added that summarizes in more detail the ECOPC identification process. This same paragraph will be added as the first paragraph of Section 11.3.  Executive Summary, new 4th paragraph will be added as follows: "Because this process did not identify any ECOPC in the SWEU, no risk characterization was performed and site-related risks are likely to be minimal for the ecological receptors evaluated in the SWEU." This same paragraph will be added to Section 11.3.



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SWEU	CDPHE	Specific	12.3	Vol 12	12.2. Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	<p>Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.1.1 Uncertainty Associated with Data Adequacy and Data Quality, will provide a brief summary and refer back to Section 1.2 for detailed information.</p> <p>Section 10.1.3, Uncertainty Associated with Elimination of ECOIs Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say "unlikely to have a significant effect".</p> <p>Section 10.2 Summary of Significant Sources of Uncertainty, the following text will be added: While some of the sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.</p>
SWEU	CDPHE	Specific	12.3	Vol 12	12.3. Section 11.0 - Summary and Conclusions – The overall stated conclusions that potential risks to ecological receptors in the SWEU are likely to be negligible cannot be supported by the quantitative risk estimates. If no risk characterization step is performed, it does not mean that risks are likely to be negligible. Additionally, there is significant uncertainty associated with the elimination of certain ECOIs before the risk characterization step.	Section 11.3, 2nd paragraph will be modified as follows: Because this process did not identify any ECOPCs in the SWEU, no risk characterization was performed and site-related risks are likely to be minimal for the ecological receptors evaluated in the SWEU.
SWEU	CDPHE	Specific	12.4	Vol 12	<p>Attachment 3:</p> <p>12.4. Section 4.0- Professional Judgment - Background Comparisons – Please revise background comparison discussions in accordance with the above comment # 4.5.</p>	<p>Attachment 3, Section 4.0: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.</p> <p>Background concentrations from Colorado and the bordering states are only one line of evidence in the professional judgment evaluation. The comparison to these regional background concentrations is not given any special significance relative to other lines of evidence. However, footnote 3 in Attachment 3 will be modified to note that the concentrations are simply regional benchmarks for naturally-occurring metals.</p>
SWEU	CDPHE	Specific	12.5	Vol 12	12.5. Section 4.0- Professional Judgment evaluation – Elimination of ECOIs as ECOPCs – Based on the professional judgment evaluation using spatial trends, process knowledge, and/or statistical background comparisons, some ECOIs should be carried forward into the risk characterization step (e.g., arsenic and zinc for PMJM receptors and chromium and nickel for non-PMJM receptors).	Attachment 3, Section 4.0: No ECOPCs will be added for non-PMJM receptors or the PMJM based on an agency meeting held on 4/12/06.
SWEU	EPA	Specific	S12.1	Vol 12	<p>SPECIFIC COMMENTS FOR VOLUME 12, SOUTHWEST BUFFER EU</p> <p>S12.1. Section 7.1, Page 13, last paragraph: The text states that the "SWEU has 5 sample locations occurring in PMJM habitat". However, Figure 1.5 and Table 1.6 only identify 4 sampling locations in PMJM habitat. The total number of samples in PMJM habitat should be verified and the text should be revised. In addition, the text states that one sample from the SEEU in PMJM habitat was evaluated in the SWEU PMJM evaluation, but Figure 1.5 does not identify this sampling location and it is not clear if the summary statistics for surface soil in PMJM habitat (Table 1.6) include this sample. This SEEU sampling location should be added to Figure 1.5 and the dataset utilized to create Table 1.6 should be checked to ensure that the SEEU sample is included.</p>	<p>Section 7.1, last paragraph, will be modified as follows: The SWEU has four sample locations occurring in PMJM habitat within SWEU (Figure 1.5). However, the PMJM habitat evaluated for the SWEU includes one additional sample location from PMJM habitat identified as part of the SEEU. As presented in Table 1.2, surface soil samples were collected and analyzed for inorganics (4 samples) and radionuclides (7 samples). There were no organic samples collected in PMJM habitat. A data summary is provided in Table 1.6 for surface soil in PMJM habitat.</p> <p>Figure 1.5 will be revised to include the one sample location in the adjacent SEEU.</p>
SWEU	EPA	Specific	S12.2	Vol 12	S12.2. Section 7.2.4, Page 15, last paragraph: This entire paragraph should be removed as it is redundant with the preceding paragraph and is incorrectly citing Table 7.5 and 7.6.	Section 7.2.4, most of the last paragraph will be deleted, as requested. However, the last two sentences of this paragraph will remain.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
SWEU	EPA	Specific	S12.3	Vol 12	S12.3. Section 7.2.6, Page 16, Non-PMJM, last sentence: The text states that “chemicals that were retained are identified as ECOPCs”. However, no chemicals were retained as part of the ECOPC selection. This sentence should be revised as follows: “No chemicals were retained as surface soil ECOPCs for the SWEU.”	Section 7.2.6, Non-PMJM Receptors, 1st paragraph, last sentence will be modified as follows: No chemicals were retained as surface soil ECOPCs for the SWEU.
SWEU	EPA	Specific	S12.4	Vol 12	S12.4. Attachment 1, Section 1.3.1: The text states that “all nondetected analytes in surface soil were below their respective ESLs”. However, Table A1.3 shows that the highest reported detection limit for thallium (1.2 mg/kg) exceeds the ESL (1.0 mg/kg). This paragraph should be revised to include a discussion of adequacy of the detection limit for thallium.	The text of Attachment 1 has been entirely revised. The specific comment regarding thallium will be addressed in a new Section 2.1
SWEU	EPA	Specific	S12.5	Vol 12	S12.5. Attachment 3, Comparison to RFETS Background: For most metals, this section has been revised to remove any statements that draw conclusions about the similarity/dissimilarity of the site and RFETS background soil datasets based on the box and whisker plots. As written, the chemical-specific sections only provide a text summary of the site and RFETS background data set statistics without any interpretation of their meaning. In order to be a meaningful line of evidence, each chemical-specific section should be revised to discuss the degree of overlap between the two distributions and an evaluation of whether the difference is or is not likely to be of ecological significance.	The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
SWEU	EPA	Specific	S12.6	Vol 12	S12.6. Attachment 3, Vanadium, Risk Potential: In the interim draft EU volume (dated July 2005), this section included a discussion of the low confidence in the plant ESL, as assigned by the plant ESL source report (Efroymson et al. 1997), which supported the conclusion that vanadium should be excluded as an ECOPC for terrestrial plants. This discussion has been removed in the Draft EU volume. It is recommended that this discussion be added back into the risk potential section for vanadium.	Attachment 3, Section 4.7.5 Risk Potential for Plants and Wildlife, 2nd paragraph will be modified to include the following: In addition, the confidence placed on the value by the source (Efroymson et al. 1997) is low. Other studies reported in the same reference (Efroymson et al. 1997) indicates no effects at concentrations up to 40 mg/g and low effects at concentrations up to 60 mg/kg.
SWEU	EPA	Specific	S12.7	Vol 12	Specific Comments Identified Previously (August 17, 2005) that Have Not Been Addressed S12.7. Section 1.0, last paragraph: The text does not provide any indication as to the type of contamination that may be associated with the ‘roadway spraying’ (PAC 000-501). It is not clear why this area is considered a PAC or why it needed to be evaluated for NFA. Please revise the text to indicate the type spray materials used on the roads and potential contamination associated with ‘roadway spraying’.	Section 1.1, the last paragraph will be modified to include a discussion regarding the type of contamination that may be associated with historical IHSS, Roadway Spraying (PAC 000-501).
SWEU	EPA	Specific	S12.8	Vol 12	S12.8. Section 1.1.2, 1st paragraph: The paragraph indicates how the EU receives no runoff from the IA, but does not mention that the draws are likely to have received runoff from PAC 000-501, roadway spraying, which is within the EU. Please revise the text to present a more complete description of the runoff from potentially contaminated areas.	Section 1.1.2, 1st paragraph, last sentence will be added as follows: Although they do receive runoff from PAC 000-501, this IHSS is not expected to be a source of contamination (see Section 1.1).
SWEU	EPA	Specific	S12.9	Vol 12	S12.9. Table 1.1: This table should be revised to include a column that identifies the chemicals of potential concern identified for each IHSS.	This suggested change to Table 1.1 would be applicable to all EUs and AEUs, and represents a considerable effort to implement. Chemicals of potential concern based on previous investigations are identified in the FY2005 Final Historical Release Report, Appendix B to the RI/FS report. A footnote will be added to Table 1.1 to direct the reader to this appendix for further information on chemicals of potential concern.
SWEU	EPA	Specific	S12.10	Vol 12	S12.10. Table 1.2: Because data adequacy is evaluated separately for each analysis group, the row for “Organics” should be split into the following analysis groups: SVOCs, VOCs, PCBs, Pesticides, Herbicides, Dioxins.	The purpose of Table 1.2 is to give the reader a general understanding of the number of inorganic, organic and radionuclide samples in each medium for a given EU. A more detailed breakdown on the organics is provided in subsequent Section 1 tables. No change will be made to Table 1.2.
SEEU	CDPHE	Specific	13	Vol 13	VOLUME 13: Southeast Buffer Zone Area Exposure Unit (SEEU) Overall, these comments are same as the above note comments on the SWEU, except the suggested ECOIs that should be evaluated as ECOPCs in the risk characterization step.	Additional ECOPCs will not be added for the SEEU per the agency meeting on 4/12/06.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
SEEU	CDPHE	Specific	13.1	Vol 13	13.1. Executive Summary - Please revise this section in accordance with the following comments: a) It is important to include a list of ECOIs that were evaluated in the professional judgment evaluation.	Executive Summary, 3rd paragraph will be modified to discuss the ECOIs that were included in the professional judgment evaluation.
SEEU	CDPHE	Specific	13.1	Vol 13	b) The text states risks to ecological receptors are likely to be negligible in this EU because no ECOPCs were identified. This statement cannot be supported by quantitative risk estimates because no risk characterization was performed. Additionally, this statement is too broad to capture the impact of the various screening steps in the selection of ECOPCs as well as the professional judgment evaluation.	In the Executive Summary, a new 3rd paragraph will be added that summarizes in more detail the ECOPC identification process. This same paragraph will be added as the first paragraph of Section 11.3.  Executive Summary, new 4th paragraph will be added and includes the following sentence: "Because this process did not identify any ECOPCs in the SEEU, no risk characterization was performed and site-related risks are likely to be minimal for the ecological receptors evaluated in the SEEU." This same sentence will be added to Section 11.3.
SEEU	CDPHE	Specific	13.2	Vol 13	13.2. Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.1.1 Uncertainty Associated with Data Adequacy and Data Quality, will refer back to Section 1.2 for detailed information.  Section 10.1.3, Uncertainty Associated with Elimination of ECOIs Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say "unlikely to have a significant effect".  Section 10.1.4, Summary of Significant Sources of Uncertainty, the following text will be added: While some of the sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.
SEEU	CDPHE	Specific	13.3	Vol 13	13.3. Section 11.0 - Summary and Conclusions – The overall stated conclusions that potential risks to ecological receptors in the SEEU are likely to be negligible cannot be supported by the quantitative risk estimates. If no risk characterization step is performed, it does not mean that risks are likely to be negligible. Additionally, there is significant uncertainty associated with the elimination of certain ECOIs before the risk characterization step.	Section 11.3, 2nd paragraph will be modified as follows: Because this process did not identify any ECOPCs in the SEEU, no risk characterization was performed and site-related risks are likely to be minimal for the ecological receptors evaluated in the SEEU.
SEEU	CDPHE	Specific	13.4	Vol 13	Attachment 3: 13.4. Section 4.0- Professional Judgment - Background Comparisons – Please revise background comparison discussions in accordance with the above comment # 4.5.	Attachment 3, Section 4.0: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.  Background concentrations from Colorado and the bordering states are only one line of evidence in the professional judgment evaluation. the comparison to these regional background concentrations is not given any special significance relative to other lines of evidence. However, footnote 3 in Attachment 3 will be modified to note that the concentrations are simply regional benchmarks for naturally-occurring metals.
SEEU	CDPHE	Specific	13.5	Vol 13	13.5. Section 4.0- Professional Judgment evaluation – Elimination of ECOIs as ECOPCs – Based on the professional judgment evaluation using spatial trends, process knowledge, and/or statistical background comparisons, some ECOIs should be carried forward into the risk characterization step (e.g., copper, chromium, nickel, and vanadium).	Attachment 3, Section 4.0: No ECOPCs will be added for non-PMJM receptors based on an agency meeting held on 4/12/06.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
SEEU	EPA	Specific	S13.1	Vol 13	SPECIFIC COMMENTS FOR VOLUME 13, SOUTHEAST BUFFER EU S13.1. Section 1.1.4, Surface Soil, Page 6, last paragraph, first sentence: The text states that "...the data summary for the detected analytes for those samples within PMJM habitat is presented in Table 1.6". However, the portions of PMJM habitat that occur in the SEEU are being evaluated as part of the SWEU and LWOEU volumes. In addition, Table 1.6 presents summary statistics for subsurface soil. This sentence should be revised as follows: "...SEEU surface soil is presented in Table 1.5."	The text will be revised to correct the error.
SEEU	EPA	Specific	S13.2	Vol 13	S13.2. Section 7.2.1, PMJM: Currently, this section only identifies the SWEU volume as the source of the PMJM evaluation for habitat patches within the SEEU. The PMJM evaluations for the habitat patches located in the SEEU are performed in the SWEU (patches #29 and #30) and the LWOEU (patch #28). Recommend changing this sentence as follows: "No screening for PMJM receptors was conducted in the SEEU because the SEEU PMJM habitat is addressed as part of the LWOEU and SWEU PMJM evaluations."	Section 7.2.1, PMJM, this paragraph will be modified as follows: No screening for PMJM receptors was conducted in the SEEU because the SEEU PMJM habitat is addressed as part of the SWEU and LWOEU PMJM evaluations.
SEEU	EPA	Specific	S13.3	Vol 13	S13.3. Section 7.2.6, Page 16, Non-PMJM, last sentence: The text states that "chemicals that were retained are identified as ECOPCs". However, no chemicals were retained as part of the ECOPC selection. This sentence should be revised as follows: "No chemicals were retained as surface soil ECOPCs for the SEEU."	Section 7.2.6, Non-PMJM, last sentence will be modified as follows: No chemicals were retained as surface soil ECOPCs for the SEEU.
SEEU	EPA	Specific	S13.4	Vol 13	S13.4. Section 10.1, Chemical Risk Characterization: This section is redundant with the last three sentences in the preceding paragraph (Section 10.0) and should be removed (see Section 10 of the SWEU report for an example of recommended format).	Section 10.1 Chemical Risk Characterization will be deleted as suggested in this comment. The format of Section 10 will now be similar to SWEU.
SEEU	EPA	Specific	S13.5	Vol 13	S13.5. Table 7.13: The 2nd column header should be changed from "Exceed Any NOAEL ESL?" to "Exceeds Prairie Dog NOAEL ESL?"	Table 7.1.3 will be revised as suggested in this comment.
SEEU	EPA	Specific	S13.6	Vol 13	S13.6. Figure 1.5: Section 7.1 states that the "SEEU has one sample location occurring in PMJM habitat". However, Figure 1.5 does not identify any sampling locations in PMJM habitat. This figure should be revised to identify the single sampling location in SEEU PMJM habitat.	The sample location that is within Patch 29A is presented in Figure 1.5 and is discussed in the text.
SEEU	EPA	Specific	S13.7	Vol 13	S13.7. Attachment 2, Data Quality, Metals-Soil: As shown in Table A2.7, 12 of 60 (20%) of the field duplicates for metals in soil failed to meet data quality criteria. Yet the text in Section 3.3 states "a single sample/field duplicate pair resulted in the elevated percentage of field duplicate qualification". It appears that Table A2.7 is presenting the failure rate based on the total number of duplicate analyte pairs, while the text is discussing the failure rate based on the total number of duplicate samples (i.e., the 12 analyte pairs that failed were all from a single duplicate sample). Section 3.3 should be revised to clarify this difference.	Attachment 2, Data Quality Assessment will be revised based on the agency meeting on 5/17/06.
SEEU	EPA	Specific	S13.8	Vol 13	S13.8. Attachment 3, Comparison to RFETS Background: For several metals (e.g., chromium, copper), this section has been revised to remove any statements that draw conclusions about the similarity/dissimilarity of the site and RFETS background soil datasets based on the box and whisker plots. As written, the chemical-specific sections only provide a text summary of the site and RFETS background data set statistics without any interpretation of their meaning. In order to be a meaningful line of evidence, each chemical-specific section should be revised to present a summary of whether the RFETS box and whisker plot supports excluding/retaining the chemical as an ECOPC, and why.	The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
SEEU	EPA	Specific	S13.9	Vol 13	S13.9. Attachment 3, Pattern Recognition: This section identifies sample 04F0810-003 as having anomalously high surface soil concentrations for several metals. This sample identifier is not found in Figure 1.6 (presented in the main text). The sample identifier provided in the professional judgment text should be revised to cite the sample location name as provided in Figure 1.6.	Attachment 3, Section 4.2.3, 1st paragraph, 1st sentence will be modified as follows: The probability plot for the natural log transformed data set for arsenic in surface soil/surface sediment within SEEU (Figure A3.4.2) suggests a single background population ranging from 2.5 to about 9.3 mg/kg but with two samples (both samples collected at sample location DN06-000; see Figure 1.6 in the main text of this volume) with anomalously elevated concentrations (12 and 23 mg/kg).



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
SEEU	EPA	Specific	S13.10	Vol 13	S13.10.Attachment 3, Boron, Background Comparison: This section should reiterate that boron was not evaluated in RFETS background soils.	Attachment 3, Section 4.3 Boron, 1st paragraph, a new 1st sentence will be added as follows: For boron in surface soil, a statistical comparison between SEEU and RFETS background data could not be performed because RFETS background surface soil samples were not analyzed for boron.
SEEU	EPA	Specific	S13.11	Vol 13	S13.11.Attachment 3, Copper, Process Knowledge: The text states that documented historical source areas for copper are "remote from the SEEU". However, CRA Volume 2 identifies the LWOEU as one of the locations of potential copper contamination. Because the SEEU is bounded by the LWOEU to the north, the professional judgment should be revised to discuss potential transport mechanisms between the LWOEU and the SEEU.	Surface soil in the LWOEU has a copper concentration range of 7.8 to 25 mg/kg, with a mean of 15.2 mg/kg. Surface soil in background locations has a copper concentration range of 5.2 to 16 mg/kg, with a mean of 13.0 mg/kg. Although copper is at concentrations statistically significantly above background in the LWOEU, the concentrations are sufficiently similar to background concentrations as to not be considered a "source" for the SEEU. No changes will be made to the text.
SEEU	EPA	Specific	S13.12	Vol 13	S13.12.Attachment 3, Copper, Conclusion: Based on the lines of evidence presented for copper, the conclusion that copper concentrations are "representative of naturally occurring conditions" is not supported. The process knowledge indicates that copper may be a contaminant of potential concern in the LWOEU adjacent to the SEEU, the spatial trend evaluation shows that copper concentrations generally tend to be highest in site-impacted areas relative to remote areas, the log probability plot is inconclusive, EU soils are statistically higher than background, and the box plot shows that about 50% of all EU soil concentrations are outside the RFETS background range. The statement that copper concentrations in the SEEU are naturally occurring should be removed, and the text should be revised to retain copper as an ECOPC for the SEEU and to present a more balanced summary of the weight of evidence.	No ECOPCs will be added for non-PMJM receptors based on an agency meeting held on 4/12/06.
SEEU	EPA	Specific	S13.13	Vol 13	S13.13. Attachment 3, Molybdenum, Risk Potential: It appears that the molybdenum UTL (2.64 mg/kg) is higher than the MDC (1.90 mg/kg). According to the CRA Methodology, if the UTL is higher than the MDC the EPC is set equal to the MDC. This section should be revised to be based on the MDC.	Attachment 3, Section 4.9.5, Risk Potential for Plants and Wildlife, Surface Soil, 1st sentence will be modified as follows: The molybdenum UTL in the SEEU (1.9 mg/kg) exceeded the NOAEL ESL for two receptors groups, the insectivorous deer mouse receptor (1.9 mg/kg) and terrestrial plant receptors (2.0 mg/kg).
SEEU	EPA	Specific	S13.14	Vol 13	S13.14. Attachment 3, Vanadium, Risk Potential: In the interim draft EU volume (dated June 2005), this section included a discussion of the low confidence in the plant ESL, as assigned by the plant ESL source report (Efroymsen et al. 1997), which supported the conclusion that vanadium should be excluded as an ECOPC for terrestrial plants. This discussion has been removed in the Draft EU volume. It is recommended that this discussion be added back into the risk potential section for vanadium.	Attachment 3, Section 4.12.5 Risk Potential for Plants and Wildlife, Surface Soil (Non-PMJM), 1st paragraph, new 3rd sentence will be added as follows: In addition, the confidence placed on the value by the source (Efroymsen et al. 1997) is low. Other studies reported in the same reference (Efroymsen et al. 1997) indicate no effects at concentrations up to 40 mg/kg and low effects at concentrations up to 60 mg/kg.
SEEU	EPA	Specific	S13.15	Vol 13	Comments Identified Previously (July 25, 2005) that Have Not Been Addressed S13.15.Section 1.1, Surface Soil, 1st paragraph: Please include a sentence that clarifies that surface soil samples collected as part of the 30-acre grid sampling effort in 2004 were analyzed for radionuclides and metals only.	Section 1.1.4, Data Description, Surface Soil, 1st paragraph, a new last sentence will be added as follows: These samples were analyzed for radionuclides and metals only.
SEEU	EPA	Specific	S13.16	Vol 13	S13.16. Section 1.1, Southeast Buffer Zone Exposure Unit Description, last paragraph: Please identify the source of the waste oils used for the roadway spraying for PAC 000-501. In addition, please clarify if the NFA for PAC 000-501 included an assessment of potential ecological risks. If so, include a brief summary of which ecological receptors (e.g., wildlife, benthic invertebrates) and which exposure pathways (e.g. ingestion, direct contact) were evaluated.	Section 1.1 Southeast Buffer Zone Exposure Unit Description, a new 4th paragraph will be added that discusses the historical IHSS, Roadway Spraying (PAC 000-501).
SEEU	EPA	Specific	S13.17	Vol 13	S13.17. Table 1.1: This table should be revised to include a column that identifies the chemicals of potential concern identified for each IHSS.	This suggested change to Table 1.1 would be applicable to all EUs and AEUs, and represents a considerable effort to implement. Chemicals of potential concern based on previous investigations are identified in the FY2005 Final Historical Release Report, Appendix B to the RI/FS report. A footnote will be added to Table 1.1 to direct the reader to this appendix for further information on chemicals of potential concern.
SEEU	EPA	Specific	S13.18	Vol 13	S13.18. Table 1.2: Because data adequacy is evaluated separately for each analysis group, the row for "Organics" should be split into the following analysis groups: SVOCs, VOCs, PCBs, Pesticides, Herbicides, Dioxins.	The purpose of Table 1.2 is to give the reader a general understanding of the number of inorganic, organic and radionuclide samples in each medium for a given EU. A more detailed breakdown on the organics is provided in the subsequent summary statistics tables. No change will be made to Table 1.2.

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IAEU	CDPHE	Specific	14.1	Vol 14	14.1. Executive Summary – This section may need to be revised in accordance with comments noted below.	No changes were required to the Executive Summary text based on Comments 14.1. See responses to Comments 14.2 and 14.3.
IAEU	CDPHE	Specific	14.2	Vol 14	14.2. Section 2.2.2. - Selection of ECOPCs for subsurface soil/subsurface sediment – Please note the following comments: (a) Tetrachloroethene was selected as an ECOPC for the risk characterization in the pre-draft report (dated July 2005). However, this is not an ECOPC in the draft report (dated October 2005). Additionally, the comparison of data in Table 2.5 shows that the MDC and UCL-EPC in the draft report is significantly lower than the MDC and UCL-EPC provided in the pre-draft report. For example, MDCs and UCLs are 197,000 ppm and 1043 ppm respectively in the draft report and 2.7E+07 ppm and 77,200 ppm respectively in the pre-draft report. Please clarify reasons for the lower MDC and UCL-EPC in this draft report.	Section 2.2.2, Remediation activities removed the soils associated with the elevated PCE concentrations in the IAEU following the production of the earlier draft of the IAEU CRA. Confirmation samples collected post-remediation were used in this report. Since no specific documentation of any other remedial activities are included in any CRA document, no changes will be made to the text.
IAEU	CDPHE	Specific	14.2	Vol 14	(b) Significantly lower MDC and UCL-EPC values are observed in the draft version for some other chemicals (e.g., PCBs).	Additional removal actions were conducted in the IAEU after the pre-draft version of the CRA was prepared. The MDCs and EPC values presented in the Draft CRA are representative of post-accelerated conditions. No changes will be made to the text.
IAEU	CDPHE	Specific	14.3	Vol 14	14.3. Section 4.4- Human Health Toxicity Assessment – Please note that the provisional inhalation cancer slope factor for benzo(a) pyrene is 3.1 per mg/kg/day (vs. 0.31 per mg/kg/day provided in Table A4.1.1). This has resulted in the underestimation of potential risk (by 10-fold) through an inhalation exposure pathway.	Section 4.0, The provisional inhalation slope factor for benzo(a)pyrene was corrected to 3.1 per mg/kg/day in Table A4.1.1 and risk calculations have been revised using the corrected slope factor. The correction to the slope factor did not result in changes to the overall risk estimate for all exposure pathways.
IAEU	CDPHE	Specific	14.4	Vol 14	14.4. Executive Summary – Please note the following comments: (a) It is not appropriate to state that the ECOPC/receptor pairs were evaluated in the risk characterization using a range of EPCs, exposure scenarios, and toxicity reference values to give a range of risk estimates. This statement should be revised to clarify the use of default assumptions and alternate assumptions for the uncertainty analysis.	Executive Summary, 5th paragraph will include the following text: ECOPC/receptor pairs were evaluated in the risk characterization using default exposure and risk calculations as defined in the Comprehensive Risk Assessment (CRA) Methodology. In addition, a refinement of the exposure and risk models based on chemical-specific uncertainties associated with the initial default exposure models were completed for several ECOPC/receptor pairs to provide a refined estimate of potential risk.
IAEU	CDPHE	Specific	14.4	Vol 14	(b) It is not appropriate to conclude that no significant risks to wildlife receptors that may use the LWOEU are predicted. This statement should be revised to indicate "low to potentially significant risks" to capture the full extent of risk estimates using default and alternative assumptions for different receptors and ECOPCs as per Section 10.1 on the interpretation of HQs.	Per the consultative process, the RFCA Parties agreed to use the following text in the Executive Summary and in Section 11.3: Based on default and refined calculations, site-related risks are likely to be low to moderate with some high levels of uncertainty for the ecological receptors evaluated in the IAEU.
IAEU	CDPHE	Specific	14.5	Vol 14	14.5. Section 10.1. – Chemical Risk Characterization – Please note the following comments on the risk characterization for chromium, di-n-butylphthalate, and total PCBs:	No response necessary.
IAEU	CDPHE	Specific	14.5	Vol 14	(a) Risk to the mourning dove (insectivore) from chromium should be classified as potentially significant (vs. low to moderate stated in the text) based on LOAEL HQs between 1 and 5 in 100 percent of the grid cells. The overall risks based on the default assumptions and uncertainty analysis should be summarized as low to potentially significant (vs. low risks stated in the text).	Section 10.1, Only screening-level HQs using the default risk model are greater than 1. When the median BAF is used, as recommended by USEPA EcoSSL guidance, no LOAEL HQs are greater than 1 using either Tier 1 or Tier 2 statistics indicating that the potential for adverse effects are likely to be low.
IAEU	CDPHE	Specific	14.5	Vol 14	(b) Risk to the mourning dove (insectivore) from di-n-butylphthalate should be classified as potentially significant (vs. low in the text) based on LOAEL HQs between 1 and 5 in 100 percent of the grid cells. The overall risks based on the default assumptions and uncertainty analysis should be summarized as potentially significant given that the highest LOAEL HQ equaled 2.	Based on the uncertainty analysis which discussed the conservatism inherent in the di-n-butylphthalate risk model, the overall conclusion will be that the potential for adverse effects is likely to be low to moderate but with high levels of uncertainty. There will not be refined HQs calculated for di-n-butylphthalate.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
IAEU	CDPHE	Specific	14.5	Vol 14	(c) Risk to the mourning dove (insectivore) from total PCBs should be classified as moderate to potentially significant (vs. low in the text) based on LOAEL HQs between 1 and 5 in 5 percent of the grid cells. The overall risks based on the default assumptions and uncertainty analysis should be summarized as moderate to potentially significant.	No LOAEL HQs greater than 1 were calculated for any receptor, therefore the potential for adverse effects are likely to be low. Individual grid cells are not a measure of exposure to the population of receptors as indicated by the assessment endpoints and the CRA Methodology. The EPC for the receptor of interest is the Tier 2 UTL which results in LOAEL HQs < 1. No changes will be made to the text.
IAEU	CDPHE	Specific	14.6	Vol 14	14.6. Section 10.3- Uncertainty Analysis – Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 10.1.1 Uncertainty Associated with Data Adequacy and Data Quality, will provide a brief summary and refer back to Section 1.2 for detailed information. Section 10.3.3. Uncertainty Associated with Elimination of ECOIs Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. Text will be revised to say "unlikely to result in risk concerns for wildlife populations". Section 10.4 Summary of Significant Sources of Uncertainty, the following text will be added: "While some of the sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization."
IAEU	CDPHE	Specific	14.7	Vol 14	14.7. Section 11.2- Summary and Conclusions – The overall conclusions are too broad to capture the full extent of potential risks based on default HQs and uncertainty analysis HQs. Please revise this section to conclude low to potentially significant risks (vs. "no significant risks" stated in the text). Also, it is important to discuss the limitation of wildlife biomonitoring studies that they did not address small home range animals.	Note: Section 11.2 became Section 11.3. Section 11.3 will be revised to provide more detail on the results of the risk characterization. In particular, ECOPC/receptor pairs that had LOAEL HQs greater than 1 using the default assumptions will be discussed in more detail in the revised conclusions.  Biomonitoring studies are discussed in other Appendix A EU volumes. There is little habitat within the IAEU.
IAEU	CDPHE	Specific	14.8	Vol 14	Attachment 3:14.8. Section 4.0- Professional Judgment - Background Comparisons – Please revise background comparison discussions in accordance with the above noted comment # 4.5.	Reference to Comment #4.5, appears to be incorrect. Response is made in regards to Comment #4.6. Attachment 3, Section 4.0: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail. However, they are not emphasized in order to not give extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes to the text will be made. Background concentrations from Colorado and the bordering states are only one line of evidence in the professional judgment evaluation. the comparison to these regional background concentrations is not given any special significance relative to other lines of evidence. However, footnote 3 in Attachment 3 will be modified to note that the concentrations are simply regional benchmarks for naturally-occurring metals.
IAEU	EPA	Specific	S14.1	Vol 14	SPECIFIC COMMENTS FOR VOLUME 14, INDUSTRIAL AREA EU S14.1. Section 1.1.5, Surface Soil, 1st paragraph: The last sentence of this paragraph states that no surface soil samples were collected in the IAEU during the 30-acre sampling. Yet, the preceding sentence states that samples collected in 2004 were located on a 30-acre grid. These statements are internally inconsistent. Verify which statement is correct and modify this paragraph to remove any conflicting sentences.	No surface soil samples were collected in the IAEU during the 30-acre sampling is the correct statement. Section 1.1.5, Surface soil, the 1st paragraph, the 6th and 7th sentences will be deleted. The last sentence will read, "No surface soil samples were collected in the IAEU during the 30-acre sampling for the CRA due to the density of previous sampling (DOE 2004)."
IAEU	EPA	Specific	S14.2	Vol 14	S14.2. Section 7.2.2, Detection Frequency Evaluation: The text states that population-level risks from several infrequently detected ECOIs are highly unlikely. However, the text makes no mention that the detection limits achieved for these chemicals for the non-detect samples were inadequate to assess potential ecological risks. As seen in Attachment 1, the reported detection limits for ECOIs identified in this section were above their respective ESLs. As noted in the general comments above, any chemical with a low detection frequency but an inadequate detection limit should be identified as a source of uncertainty, and the text should not state that this chemical is not of concern.	Section 7.2.2 will be revised to discuss uncertainties in the overall risk estimates that result from detection limits exceeding the ESLs.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
IAEU	EPA	Specific	S14.3	Vol 14	S14.3. Section 10.1.2, Chromium, Terrestrial Plants & Invertebrates, page 30, 2nd to last paragraph: The description of the LOEC for terrestrial invertebrates refers to a 30 percent reduction in soybean roots. This endpoint is not appropriate for assessing terrestrial invertebrates. Verify the basis of the LOEC for terrestrial invertebrates and correct this sentence.	Section 10.1.2, Chromium, Terrestrial Plants and Invertebrates, 7th paragraph, 2nd sentence will be modified as follows: The alternative LOEC is representative of a concentration at which there is a 30 percent reduction in earthworm growth (see Attachment 5).
IAEU	EPA	Specific	S14.4	Vol 14	S14.4. Attachment 3, Antimony, Process Knowledge: The conclusion that "antimony is unlikely to be present in RFETS soil" does not accurately reflect the process knowledge information for antimony provided in CRA Volume 2. The process knowledge section for antimony in CRA Volume 2 specifically identifies three EUs that may have been impacted due to site-related activities (WBEU, LWOEU, NNEU). The text should be revised to accurately summarize the process knowledge information for antimony presented in CRA Volume 2.	Attachment 3, Antimony, Process Knowledge, the text will be revised as suggested.
IAEU	EPA	Specific	S14.5	Vol 14	S14.5. Attachment 3, Total PCBs, Process Knowledge: The statement, "there are no documented operations or activities that occurred in the IAEU involving the use of total PCBs" is not supported. As seen in Table 1.1 in the main text, there are several IHSSs listed in which PCBs are identified as the primary contaminants of concern, including IHSS 100-3 (Building 111 Transformer PCB Leak), IHSS 100-5 (Building 121 Incinerator, accepted PCB-laden paper), and IHSS 500-5 (Transformer PCB Leak 558-1). This section should be revised to accurately present the potential sources of PCB contamination located within the IAEU.	Attachment 3, Total PCBs, Process Knowledge, the text will be revised to acknowledge the presence of historical IHSSs in the IAEU involving transformer oil leaks.
IAEU	EPA	Specific	S14.6	Vol 14	S14.6. Attachment 5, Background Risk Calculations: For the organic ECOPCs (bis(2-ethylhexyl)phthalate, di-n-butylphthalate, dioxin, total PCB), the text states that background risk calculations were not performed because these chemicals were not analyzed in the background data set. It is not appropriate to perform background risk calculations for organic ECOPCs, even if they were analyzed in the background data set. These sections should either be removed entirely or the text should be revised to state that background risk calculations were not performed for organic ECOPCs.	Attachment 5, Background Risk Calculations: The text will be revised to reflect the concern in this comment.
IAEU	EPA	Specific	S14.7	Vol 14	Comments Identified Previously (August 25, 2005) that Have Not Been Addressed Section 1.1.3, 1st paragraph, last sentence: It is not clear whether the statement that "Upper South Walnut Creek is the only drainage capable of supporting aquatic life" is focusing only on drainages within the IA or is referring to all drainages across RFETS. There are several drainages and ponds across the RFETS site capable of supporting fish and aquatic invertebrates. If this statement is meant to apply to the IA only, this sentence should be revised as follows: "Within the IAEU, the upper portion of South Walnut Creek is the only drainage capable of supporting aquatic life..."	Section 1.1.3, Flora and Fauna, 1st paragraph, last sentence will be modified as follows: Within the IAEU, the upper portion of South Walnut Creek is the only drainage capable of supporting aquatic life and is an intermittent stream.
Wide-ranging eco receptors	CDPHE	Specific	15.1	Vol 15A	Volume 15A 15.1. Section 5.1. Chemical Risk Characterization – It is not appropriate to conclude that risks are likely to be low to coyote (insectivore) from nickel. It would be more appropriate to classify these risks as moderate based on 7 percent of LOAEL HQs between 1 and 5 using the Tier 2 mean EPCs.	Section 5.1 Chemical Risk Characterization, 5.1.1, Nickel: Coyotes are expected to range throughout the entire site. The EPC of interest is the Tier 2 UCL, not individual grid cell means. The Tier 2 UCL HQ is less than 1 using the LOAEL TRV, indicating that the potential for adverse effects are likely to be low. No changes will be made to the text.
Wide-ranging eco receptors	CDPHE	Specific	15.2	Vol 15A	15.2. Section 5.3.5 – Summary of significant sources of uncertainty - Please revise the uncertainty discussion in accordance with the above noted comments # 3.5 and 4.4 on other EUs.	Section 1.2 Data Adequacy Assessment, will be expanded to include more detailed information on data adequacy. Section 5.3.1 Uncertainties Associated with Data Adequacy and Quality, will provide a brief summary and refer back to Section 1.2 for detailed information.  Section 5.3.3. Uncertainties Associated with Eliminating of Ecological Contaminants of Interest Based on Professional Judgment: The professional judgment evaluation is designed to eliminate chemicals when lines of evidence support the conclusion of no site-related contamination in a specific EU. No analytes in surface soil were eliminated as ECOIs based on professional judgment in the Wide Ranging Ecological Receptors EU.  Section 5.3.5 Summary of Significant Sources of Uncertainty, the following text will be added: While some of the general sources of uncertainty discussed tend to either underestimate risk or overestimate risk, many result in an unknown effect on the potential risks. However, the CRA Methodology outlines a tiered process of risk evaluation that includes conservative assumptions for the ECOPC identification process and more realistic assumptions, as appropriate, for risk characterization.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
Sitewide	EPA	General	V15A G1	Vol 15A	COMMENTS FOR VOLUME 15A, WIDE-RANGING ECOLOGICAL RECEPTORS (SITE-WIDE EU) Overall, the Draft CRA for the Site-wide EU is generally well-written and clearly organized. V15A G1. Several of the General Comments presented for the terrestrial EUs also apply to Volume 15. Please see Volume 3 through 14, General Comments EU G4, EU G7, EU G9, and EU G22.	Response to Comment EU G4: Section 1.1 of each EU volume will be revised to acknowledge that accelerated actions and agency approvals of closeout reports were generally based on addressing human health risks.  Response to Comment EU G7: Background concentrations from Colorado and the bordering states are only one line of evidence in the professional judgment evaluation. The comparison to these regional background concentrations is not given any special significance relative to other lines of evidence. However, footnote 3 in Attachment 3 will be modified to note that the concentrations are simply regional benchmarks for naturally-occurring metals.  Response to Comment EU G9: Text comparing site risks to background risks will be reviewed and revised as appropriate.  Response to Comment EU G22: The ingestion of surface water was identified as a potentially significant exposure route in the CSM in the CRA Methodology (Figure 7.2). The following sentence will be added to Section 3.0: Exposure to ECOPCs via the ingestion of surface water is also considered a potentially significant exposure route as presented in the CRA Methodology (DOE 2005a).
Sitewide	EPA	General	V15A G2	Vol 15A	V15A G2. Dioxin ESL. As shown in Table 2.5, the 95UCL on the mean for dioxin (0.016 ug/kg) exceeds the NOAEL ESL for the insectivorous coyote (0.015 ug/kg). Based on this information, a NOAEL-based HQ value of 1.1 is expected for the Tier 1 95UCL. Yet, the NOAEL-based HQ for the 95UCL is shown as 0.9 in Table 5.1. The forward calculation of the NOAEL-based HQ has been verified and is correct. However, the back-calculated NOAEL ESL presented in the CRA Methodology is not correct. The correct NOAEL ESL for the coyote (insectivore) should be 0.017 ug/kg, not 0.015 ug/kg (see Table C7). As a result, dioxin should not have been retained as an ECOPC in the site-wide assessment. The nature of this error should be identified, and any other potentially impacted NOAEL ESLs for dioxin presented in the CRA Methodology should be corrected.	The dioxin ESL in the CRA Methodology (DOE 2005a) was calculated correctly. The difference between calculations in the CRA Methodology (DOE 2005a) and EPA's comment are values used for the slope and intercept of the regression model for chemical uptake by worms. EPA used rounded values (slope = 1.2 and intercept = 3.53) and the CRA Methodology (DOE 2005a) used the values presented in the reference document (Sample, B.E., J. Beauchamp, R. Efroymson, G.W. Suter, II, and T.L. Ashwood, 1998, Development and Validation of Bioaccumulation Models for Earthworms, ES/ER/TM-220. Oak Ridge National Laboratory, Oak Ridge, Tennessee.) (slope = 1.182 and intercept = 3.533). In risk calculations for the ERA, the rounded values for slope and intercept were used. Although it is preferable to use the same values for ESLs and risk calculations, this approach results in a conservative result for the ESL. No changes will be made to ESLs.
Sitewide	EPA	General	V15A G3	Vol 15A	V15A G3. Dioxin Tier 2 95UCL. As shown in Figure 5.2, there are only 4 grids with dioxin data that can be utilized in the Tier 2 EPC calculation. Inputting these 4 grid averages into ProUCL v3.0 results in a 95UCL on the mean of 0.0099 ug/kg (see Table C8 which provides the ProUCL output details). However, Table 3.2 presents a Tier 2 95UCL of 0.0084 ug/kg. All Tier 2 EPCs should be verified and corrected as needed.	All Tier 2 EPCs will be checked and the final values will be presented in Table 3.2.
Sitewide	EPA	General	V15A G4	Vol 15A	V15A G4. Alternate TRVs. The use of "alternate" TRVs in the risk characterization must be supported by sufficient evidence that the default TRVs selected in the CRA Methodology were lacking and that alternate TRVs are more appropriate for use in assessing toxicity. The fact that an alternate TRV is higher than the default TRV is not sufficient evidence to support a conclusion that the default TRVs are too conservative. Please revise the text to provide additional supporting evidence for use of alternate TRVs.	No alternative TRVs were used in the sitewide EU risk characterization because all LOAEL HQs were less than one. No changes will be made based on this comment.
Sitewide	EPA	General	V15A G5	Vol 15A	V15A G5. Significant Digits. The risk characterization sections should ensure that HQ interpretations based on one significant digit are appropriate. Use of two significant digits in interpreting HQs may be important for some chemicals and some receptors depending upon the underlying toxicity and exposure information.	Per the consultative process, the Regulatory Agencies agreed to use the following significant digits: - One significant digit for soil HQs in EUs - One significant digit for sediment HQs in AEUs - Two significant digits for surface water HQs in AEUs
Sitewide	EPA	General	V15A G6	Vol 15A	V15A G6. Attachment 1, Detection Limit Adequacy Evaluation. As indicated in previous comments on the Pre-Draft EU reports, the detection limit adequacy evaluation has been modified to include both non-detects and infrequently detected ECOIs. However, the evaluation presented in the Site-wide EU report is currently using the lowest ESL across all wildlife receptors, rather than the lowest ESL across the receptors of primary interest for the Site-wide EU assessment (i.e., coyote, mule deer). For example, the lowest ESL across all wildlife receptors identified for 2,4-dichlorophenol in Attachment 1 is 2,744 ug/kg (based on the insectivorous deer mouse). The lowest ESL across the coyote and mule deer receptors for 2,4-dichlorophenol is 11,731 (based on the carnivorous coyote). Because the highest detection limit for 2,4-dichlorophenol in soil is 7,000 ug/kg, the conclusion that the	Attachment 1, Table A1.1 will be revised so that the minimum ESL is based on ESLs for the mule deer and coyote only.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
					detection limit was not adequate is incorrect. Attachment 1 should be revised to utilize only those ESLs for the receptors of primary interest for the Site-wide EU assessment.	
Sitewide	EPA	General	V15A G6 cont.	Vol 15A	In addition, the current text presented in Attachment 1 only provides a count of the number of ECOIs for which detection limits were not adequate (based on a comparison of the maximum detection limit to the lowest ESL). While this is informative, it would also be useful to provide additional information for these ECOIs on frequency that sample detection limits were above the ESL when the range of detection limits spans the ESL. For example, if the ESL is 100 ug/kg and the range of detection limits is 50-1,000 ug/kg, summarize how often the sample detection limit exceeds 100 ug/kg (e.g., 80 of 100 non-detect samples had detection limits that were above the ESL).	Attachment 1, Table A1.1 will be revised to include the percent of detection limits exceeding the minimum ESL for the mule deer and coyote.
Sitewide	EPA	General	V15A.1	Vol 15A	<b>SPECIFIC COMMENTS</b> S15A.1. Page 4, Section 1.1.4, 1st full paragraph, 1st sentence: The sentence states, "Sitewide receptors are only exposed to surface soil", yet the risk characterization evaluates exposures from both surface water and soil. This sentence should be revised as follows: "Site-wide receptors are exposed to surface soil and surface water." In addition, this paragraph should be revised to include a description of the surface water dataset used in the Site-wide evaluation.	Section 1.1.4 Data Description, 2nd paragraph, 1st sentence will be modified as follows: The sitewide receptors are only exposed to surface soil and surface water. Section 1.1.4 Data Description, a new 4th paragraph will be added to provide a description of the surface water data set used in the Wide-Ranging Ecological Receptors evaluation.
Sitewide	EPA	General	V15A.2	Vol 15A	S15A.2. Page 4, Section 1.3: While the Site-wide surface soil data set is generally adequate for the purposes of risk assessment for most analyte groups, limited Site-wide data are available for dioxins in surface soil. The Data Adequacy summary should be revised to include a brief summary of the potential limitations, assumptions, and biases associated with using the existing dioxin data set for the purposes of making risk decisions.	Section 1.2 Data Adequacy Assessment: Text will be revised as suggested.
Sitewide	EPA	General	V15A.3	Vol 15A	S15A.3. Page 7, Section 2.2.6, 1st sentence: As written, this sentence implies that all ECOIs were eliminated as ECOPCs. However, some ECOIs were retained as ECOPCs. Recommend revising as follows: "Most inorganic, organic, and radionuclide surface soil ECOIs..."	Section 2.2.6, 1st paragraph, 1st sentence will be modified as follows: Most inorganic, organic, and radionuclide surface soil ECOIs for wide-ranging receptors were eliminated from further consideration in the ECOPC identification process based on one of the following: (the rest of the sentence remains unchanged).
Sitewide	EPA	General	V15A.4	Vol 15A	S15A.4. Page 8, Section 3.1: This section should clarify that, while UCL and UTL EPCs are presented in Table 3.2, UCLs are the primary statistic of interest for Site-wide receptors.	Section 3.1, Exposure Point Concentrations, 1st paragraph, 2 new sentences will be added to the end of this paragraph as follows: UCLs are the primary statistic used as EPCs for sitewide receptors and are the basis for the HQ calculations. The methodology for the calculations of Tier 2 statistics is provided in Appendix A, Volume 2 of the RI/FS Report. Section 3.1, 2nd paragraph, the following text will be added to the beginning of this paragraph: The surface water EPCs were calculated for ECOIs that were identified as soil ECOPCs using the same statistical basis as determined for the soil ECOPCs (that is the UCL).
Sitewide	EPA	General	V15A.5	Vol 15A	S15A.5. Page 13, Section 5.1.2: The text states that dioxin samples collected southwest of the IA are from a depth 20 feet below ground surface that have since been covered with backfill material. These samples should have been classified as "No Longer Representative (NLR)" and excluded from the dioxin data set.	Sample data that are given an NLR designation represent soil at a sampling location that has been removed during remediation. The dioxin samples are confirmation samples collected from the floor of the excavation after the incinerator was removed and were designated as surface soil samples in the database. The environmental medium classification and depth interval for the samples used in the RI/FS (including the CRA) are as documented during sample collection. No attempt has been made to alter the environmental medium classification or depth interval based on final land configuration. The RI/FS represents post accelerated action conditions, but does not represent the final configuration of the site and specifically does not consider the final recontouring of the site.  Uncertainties associated with using subsurface soil to represent current exposures will be discussed in the specific EU volumes where this condition occurs (that is, Wide Ranging Ecological Receptors EU, the IAEU, and UWOEU).

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
	EPA	Intro		VoIs 3-15 Terrestrial EU	The first section for these volumes presents General Comments that apply to most terrestrial EU volumes (Volumes 3-14). Attached Table C1 identifies which General Comments apply to Volumes 3 through 14. The second section presents Specific Comments for each terrestrial EU volume. Included at the end of each of the terrestrial EU-specific sections is a summary of comments provided previously on the pre-draft volumes that remain as issues, but have not been addressed in the Draft CRA.	No response required.
Terrestrial	EPA	General	EU G1	VoIs 3-15 Terrestrial EU	<b>VOLUMES 3 – 14 TERRESTRIAL EXPOSURE UNIT-SPECIFIC RISK ASSESSMENTS</b> <b>GENERAL COMMENTS APPLICABLE TO TERRESTRIAL EU VOLUMES (3-14)</b> EU G1. Data Adequacy Assessment Summary: As written, Section 1.2 does not present enough detail of the data adequacy evaluation performed in CRA Volume 2 to allow a risk manager to correctly understand the limitations of the data used in the EU evaluation. The text simply states that the “data are adequate for the purposes of the CRA” but does not address any of the data limitations identified in the data adequacy evaluation. Section 1.2 should include a summary of the data adequacy conclusions from CRA Volume 2, including a brief summary of the potential limitations, assumptions, and potential biases of the available EU data sets. In cases where data are limited or absent, but Volume 2 has concluded that no additional sampling is needed, Section 1.2 should include a brief summary of the lines of evidence that were used to support this decision. In cases where the data adequacy conclusions are not the same for different media, different analyte groups, and/or different receptors, Section 1.2 should discuss the data adequacy conclusions/limitations separately for each medium, analyte group, and receptor group.	Section 1.2, Data Adequacy Assessment, as well as the sections entitled Uncertainties Associated With Data Adequacy and Quality, and Summary and Conclusions - Data Adequacy will be revised to reflect the data limitations as well as the conclusion drawn regarding the adequacy of the data to render risk management decisions.
Terrestrial	EPA	General	EU G2	VoIs 3-15 Terrestrial EU	EU G2. Flora and Fauna: Section 1.1.3 should be segregated into separate sub-headings to clearly identify the discussions for the “State Species of Concern” and “Federally-listed Threatened and Endangered Species”.	Section 1.1.3 Flora and Fauna: In lieu of creating new sub-headings, new paragraphs will be added regarding “State Species of Concern” and “Federally-listed Threatened and Endangered Species”. In addition, text will be added regarding information on xeric tallgrass prairie because it is specifically identified in the Rocky Flats National Wildlife Refuge Act.
Terrestrial	EPA	General	EU G3	VoIs 3-15 Terrestrial EU	EU G3. Data Description (Section 1.1.5): The data set criteria listed (post-June 1991 and depth ≤ 8 feet) were not the only restrictions used to select the current data sets for the risk assessment. The description does not clearly discuss that only post-removal data are being used (e.g., confirmation data). The paragraph should be modified to include the other types of data restrictions that were also applied (e.g., data were rejected by the validator, field duplicates, and to indicate that data deemed No Longer Representative [NLR]) were substituted with confirmation data for areas with accelerated actions. In addition, the text should reference CRA Volume 2 for a summary of which samples were excluded from each EU dataset along with the rationale for why they were excluded.	Section 1.1.5 Data Description, 1st paragraph, the following sentence will be added: The data set for the CRA was prepared in accordance with data processing steps described in Appendix A, Volume 2, Attachment 2 of the RI/FS Report.  In addition, CDs are provided with each EU that contain all the data from the EU (data included in the risk assessment and the data excluded from the risk assessment).
Terrestrial	EPA	General	EU G4	VoIs 3-15 Terrestrial EU	EU G4. References to Remedial Actions and Other Site Reports to Support Ecological Conclusions: In general, Section 1.1 does not clearly represent that the decisions regarding the need for remedial actions were based only on the Rocky Flats Clean up Agreement (RFCA) which focused the need for accelerated actions on human health exposure/risk and did not address ecological exposures. As written, it appears that actions were already taken to address ecological risk. It should be noted that EPA approval of the ChemRisk reports, Closeout Reports, and the NFAAs that are being discussed are based on the knowledge that potential risks to ecological receptors would be addressed in the CRA. The text should be revised to clarify that the accelerated actions and other approvals for NFAA were specifically designed to address human health exposures and that the intent of the ecological component of the CRA is to evaluate the residual contamination and any potential for risk to the ecological receptors.	Section 1.1 of each EU volume will be revised to include the following text (or text similar and specific to the EU): In general, accelerated actions were designed to address human health exposures. The intent of the ecological component of the CRA is to evaluate any potential risk to ecological receptors associated with the residual contamination at the site following the accelerated actions.
Terrestrial	EPA	General	EU G5	VoIs 3-15 Terrestrial EU	EU G5. Ecological Site Conceptual Model (SCM), Exposure Pathways, and Receptors of Concern (ROCs): The text briefly refers to the SCM being available in the CRA Methodology, but does not provide a description of how the SCM, exposure pathways and receptors of concern are addressed for specific EUs. While the Section 1.0 includes detailed descriptions of the ecological setting, habitats, and general information related to the species that inhabit the EU, standard risk assessment information regarding how the species are represented in the CRA for the EU is not addressed. Thus, it is difficult to relate how the habitats and species identified in Section 1.0 are addressed by the subsequent “Selection of ECOPC” presented in Section 7.0. It is recommended that the EU documents be revised to include a table similar to the example provided in Table 5 (attached to these	Appendix A, Volume 2, Section 2.3.1 Site Conceptual Model, Receptors of Concern, the following text will be added: Extensive ecological surveys have been conducted to identify all species that occur at the site. These species have been categorized by feeding guild. In identifying receptors of concern, the feeding guilds with species that had the greatest potential exposure to residual contamination at the site were first selected. Then, specific species (receptors of concern) in these feeding guilds to be included as assessment endpoints for the site were selected based on several criteria, including their potential to be found in the various habitats present within each EU, their potential to come into contact with ECOIs, and the amount of life history and behavioral information available. These



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
					comments). The text should be expanded to include a paragraph to address how the selected representative receptor groups specifically address the expected receptors at each EU. In addition, please revise the text to include a specific citation to the appropriate sections of the CRA Methodology that describe the process for selection of the H81 representative receptors evaluated at the site.	receptors of concern and their feeding guilds are shown in Table 2.3.  The suggested Table 5 will be incorporated into Table 2.3 of Volume 2.  In Section 7 of each EU Volume, the first paragraph will include text as follows: A detailed discussion of the SCM, including the receptors of concern, exposure pathways, and endpoints used in the ERA for the specific EU, are also provided in Appendix A, Volume 2 of the RI/FS Report.
Terrestrial	EPA	General	EU G6	Vols 3-15 Terrestrial EU	EU G6. Inclusion of Essential Nutrients in Terrestrial ECOPC Selection: It is not clear why essential nutrients (calcium, magnesium, potassium, sodium, iron) were included in the terrestrial ECOPC selection process. The CRA Methodology states that the ECOPC selection process will be conducted for "potentially toxic analytes (that is analytes that are not essential nutrients...)". It is recommended that essential nutrients be omitted from the terrestrial ECOPC selection process, or provide an indication as to why these nutrients may be artificially elevated and need to be evaluated as ECOIs.	Essential nutrients are included in the ECOI tables. In the Individual EUs and in the Section titled Uncertainties Associated with the Lack of Toxicity Data for Ecological Contaminant of Interest Detected at the Upper Walnut Drainage Exposure Unit (typically Section 10.3.2), the following text will be added: Included as a subset of the ECOIs with a "UT" designation are the essential nutrients (calcium, iron, magnesium, potassium, and sodium). Although these nutrients may be potentially toxic to certain ecological receptors at high concentrations, the uncertainty associated with the toxicity of these nutrients is expected to be low.  Note: "UT" represents uncertain toxicity.
Terrestrial	EPA	General	EU G7	Vols 3-15 Terrestrial EU	EU G7. Professional Judgment – Use of Western US State Soils[1]: The text states that because "the Front Range has highly variable terrain that changes elevation over short distances" and there are varying "soil types and geological material at Rocky Flats", it is more appropriate to use the Western States soil data set because it "is representative of these variable soil types". However, as noted previously in comments on the pre-draft EU volumes, because there is such a wide-ranging data set, such as the Western States data set used in the RCEU, is not optimal for making background comparisons. Because Colorado has such variable terrain, the use of a more localized reference data set for the purposes of comparing to the RFETS site is preferred. The question is not whether on-site concentration levels occur naturally anywhere else in Colorado or in other bordering states, but whether the observed on-site levels would be expected at the site, absent site activities. While it is agreed that comparisons to the Western States data set may be included in the weight of evidence section, this comparison should be conducted in a statistically valid quantitative manner similar to the background assessment procedure stated in the CRA Methodology (e.g., WRS or t-test) rather than a qualitative and subjective comparison of means and ranges. However, because regional reference data sets (e.g., Western US States) are inherently more variable than local background data sets, they may lack the power to recognize a concentration that is significantly higher than local background. Please revise the comparisons to present these large-scale reference areas to have less importance in the Professional Judgment when discussing comparisons to the RFETS background data set.	Within each EU Volume: The qualitative comparison to RFETS background and background concentrations from Colorado and the bordering states are only one line of evidence in the professional judgment evaluation. A comparison of site and regional background data ranges simply provides the reader a sense for the difference in the magnitude of the site and regional background concentrations. The comparison to these regional background concentrations is not given any special significance relative to other lines of evidence. No changes will be made to the text. However, footnote 3 in Attachment 3 will be modified to note that the concentrations are simply regional benchmarks for naturally-occurring metals.
Terrestrial	EPA	General	EU G8	Vols 3-15 Terrestrial EU	EU G8. Professional Judgment – Use of Western US State Soils for PMJM Comparisons: While the Professional Judgment evaluation for non-PMJM may include comparisons to the Western US State soils data set, use of this data set is not appropriate for comparisons to PMJM soils. Because the PMJM only occurs along the Front Range of Colorado and Wyoming, inclusion of data from outside the Front Range region is not valid. In addition, it is not clear whether the USGS data provided from Colorado and Wyoming are actually representative of PMJM habitat areas. Please revise any background comparisons used in the Professional Judgment for the PMJM to be restricted to the RFETS-specific background data set only.	Within each EU Volume: For the PMJM habitat, comparisons to the background concentrations from Colorado and the bordering states will be deleted. Also, footnote 3 to Attachment 3 will be revised to indicate that the comparison is only applicable to non-PMJM professional judgment because the PMJM habitat is limited to the front range of Colorado.
Terrestrial	EPA	General	EU G9	Vols 3-15 Terrestrial EU	EU G9. Comparison of ESLs to Background (HQs > 1 in Background): While it is agreed that a comparison of ESLs to the RFETS background data set is a useful evaluation, these comparisons are not conducted in a consistent manner and the conclusions are stated too strongly. In several instances, the chemical-specific risk characterization sections make statements that because risks to ecological receptors are generally not expected in background areas, this indicates that the default TRVs used to calculate risks are too conservative. First, the background concentration statistic used in these comparisons is not always clear, and differs from chemical to chemical. A comparison of an ESL to background is best characterized by reporting the fraction of all background samples that are above the ESL (e.g., 19 of 20 background samples were above the ESL). Second, the fact that an ESL is lower than some fraction of all background samples does not necessarily imply that the ESL is flawed or is inappropriate for performing screening level risk calculations.	Within each EU Volume: Text comparing site risks to background risks will be reviewed and revised as appropriate.



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					While risks are not usually expected to occur in background areas, background concentrations higher than an ESL may be the result of contamination from other (non-site) sources, or from naturally occurring levels in the environment (in the case of metals), or from conservatism in exposure and toxicity factors. In cases where an ESL is lower than a substantial fraction of all background samples, it is appropriate to recognize that the ESL may be too conservative (and hence tend to over-predict risk), but it is not appropriate to conclude that the ESL is definitely incorrect. It is agreed that when HQs are above 1 in background areas, HQ estimates at site locations should be interpreted cautiously. The risk characterization sections should be revised to present a more balanced discussion with regard to predicted risks in background areas.	
Terrestrial	EPA	General	EU G10	Vols 3-15 Terrestrial EU	EU G10. Professional Judgment – Comparison of Site to Background Data Sets: A qualitative comparison using reported ranges (minimum - maximum) is not preferred, because minimum and maximum values are a very poor indicator of the nature of the underlying distribution and emphasis on a single value does not utilize all the relevant information available for the underlying distribution. Rather, descriptive comparisons should utilize statistics provided in the box plots to make statements regarding the similarity/dissimilarity of the site and background data sets. For example, text similar to the following would be a more balanced way of discussing comparisons to background: "For chemical X, more than 90% of all samples are within the observed background range. The median values for the datasets are generally similar, and there is considerable overlap between the 10th and 90th percentile ranges of the two data sets. In addition, the site average and standard deviation ( $xx \pm xx$ mg/kg), while slightly elevated, are generally similar to background ( $xx \pm xx$ mg/kg). Based on these data, it appears that differences between chemical X in site and background soils are relatively minor."	Within each EU Volume: The qualitative comparison to RFETS and regional background data is one line of evidence in professional judgment. It is agreed that a discussion of box plots of site and background data sets provides additional detail; however, we have not emphasized the box plots so that there is not an implication that we are providing extra weight to this line of evidence. A comparison of site and background data ranges simply provides the reader a sense for the difference in the magnitude of the site and background concentrations. No changes will be made to the text.
Terrestrial	EPA	General	EU G11	Vols 3-15 Terrestrial EU	EU G11. Professional Judgment – Chemical-Specific Process Knowledge and Spatial Trends Sections: Compared to previous versions of the EU volumes, the chemical-specific process knowledge and spatial trends sections have been modified significantly and no longer provide the necessary information needed to support the EU-specific Professional Judgment decisions. In the current Draft CRA volumes, these sections simply provide a one-sentence conclusion and direct the reader to CRA Volume 2, Attachment 8 for any detailed information. In addition, in several instances the process knowledge sections do not present an accurate summary of the conclusions derived in CRA Volume 2[2]. The chemical-specific process knowledge sections should be revised to present an accurate summary of process knowledge information for the RFETS site, as well as for the EU of interest for each volume. Also, as noted in the comments on Volume 2, the conclusion that RFETS surface soil concentrations appear to reflect naturally occurring conditions for several metals is not supported. The attached Table 2 presents a summary of the process knowledge and spatial trends conclusions drawn by an independent review based on the information provided in CRA Volume 2. For each EU volume, the chemical-specific process knowledge and spatial trends sections should be verified based on the information summarized in Table 2, and modified based to present a more balanced discussion of the chemical-specific spatial trends and process knowledge information to support the professional judgment conclusions.	In the October 2005 Draft RI/FS Report details for process knowledge and spatial trends were consolidated into Appendix A, Volume 2, Attachment 8. In the individual EU Volumes for the 2006 Final RI/FS, Attachment 3 summaries will be reviewed for consistency with Volume 2, Attachment 8 and discrepancies will be reconciled.
Terrestrial	EPA	General	EU G12	Vols 3-15 Terrestrial EU	EU G12. Professional Judgment – Conclusion to Exclude ECOIs: Based on a review of the detailed Professional Judgment evaluations, it is not agreed that the weight of evidence suggests that all ECOIs should be excluded from further evaluation in the outlying EUs (e.g., WAEU, RCEU). In general, the ECOPC selection procedure is designed to exclude all chemicals that are clearly not of potential concern and retain any chemicals that may be of potential concern. In many cases, it appears that the Professional Judgment section is too quick to remove an ECOI. In cases where the available lines of evidence do not present unequivocal evidence that an ECOI should be removed as an ECOPC, the preferred course of action is to identify the chemical as an ECOPC and proceed with risk characterization, as in accordance with the CRA Methodology. The Specific Comments for each EU below identify those ECOIs that should be retained and included as ECOPCs.	In Individual EU Volumes, Attachment 3, Section 4.0 Professional Judgment: Per an agency meeting on 4/12/06, it was agreed that additional ECOPCs for the PMJM would be added to the Rock Creek EU. No additional ECOPCs will be added to the other EUs. See responses to EU-specific comments related to ECOPC selection (for example, comments number 4.7, 5.8, and 7.6).

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
Terrestrial	EPA	General	EU G13	Vols 3-15 Terrestrial EU	EU G13. Section 10.1 – General Uncertainty Analysis: In the Draft CRA EU volumes, the Ecological Uncertainty Summary (which followed the Risk Characterization in Section 11.0 in the interim draft EU volumes provided previously) has been moved into the Risk Characterization section as a sub-section. This organizational structure is not optimal and is inconsistent with the structure presented for the human health risk assessment (which presents uncertainties in a stand alone section). In addition, the ecological uncertainty summary has been modified to move text sections common to all EU volumes into CRA Volume 2, and only provides detailed uncertainty discussions for those sources of uncertainty that are EU-specific. For example, the following sections have been removed from the EU volume into CRA Volume 2: Uncertainties associated with the ECOPC selection process, Uncertainties associated with the selection of ROCs, Uncertainties associated with the calculation of EPCs, and Uncertainties associated with the development of ESLs. It is recommended that the structure and content of the ecological Uncertainty section to be similar to that presented previously in the pre-draft reports. If the current organizational structure is to be retained, at a minimum, the general sources of uncertainty discussed in CRA Volume 2 should be listed, and a description of the potential direction and magnitude of these biases should be noted in each EU volume.	The General Uncertainty Analysis Section (for example, Section 10.3 in NNEU), will be revised to include a list of the general uncertainties that are being addressed in Volume 2. Only uncertainties specific to a given EU are presented in Section 10 for each EU.
Terrestrial	EPA	General	EU G14	Vols 3-15 Terrestrial EU	EU G14. Detection Limit Types Presented in "CRAReady" Database: As noted in earlier comments, for many non-detects the Method Detection Limit (MDL) was not available so concentrations were estimated based on the Instrument Detection Limit (IDL). This data limitation was recognized in the response to comments provided as Appendix E in the pre-draft WAEU volume dated April 2005 (see previous comment #22). It is recommended that the CRA Volume 2 be modified to include a brief description of this data limitation, including a discussion of how the use of the IDL will influence risk assessment calculations.	The basis for the detection limit reported in the detection limit field within SWD is not always known, i.e., IDL, MDL, RL, SQL, etc.. Therefore, the proxy values used for statistical computations and the risk estimations for nondetected data are one-half the reported results, i.e. they are the sample results reported by the laboratory for these "U" qualified samples. These reported results are also the basis for the detection limit screen presented in Individual EU Volumes, Attachment 1. The introduction to each individual EU Volume, Attachment 1 will be modified to discuss how reported results are used in lieu of detection limits.
Terrestrial	EPA	General	EU G15	Vols 3-15 Terrestrial EU	EU G15. Sample Location Figures: The figures are too general to be able to distinguish the types of analyte groups that have been analyzed at each sampling location. In many instances, the sampling locations have only been analyzed for radionuclides and metals. Therefore, locations on the maps may be misinterpreted for analyte groups that were infrequently analyzed (i.e., organics). Ideally, sample locations should indicate the type of analyte group (radionuclides, metals, organics) analyzed at that location. Please revise the figures to allow for a more specific understanding the data used in the risk assessment.	The requested detail can be found on the figures in Appendix A, Volume 2, Attachment 3 (Data Adequacy Report). Therefore, changes will not be made to the individual EU Volume figures. The number of samples for each analyte group and the number of results for each analyte are provided in individual EU Volumes, Section 1 Tables.
Terrestrial	EPA	General	EU G16	Vols 3-15 Terrestrial EU	EU G16. Professional Judgment – Ecological Risk Potential: For those chemicals which have been evaluated in the Ecological Soil Screening Level (Eco-SSL) guidance[3] (e.g., chromium, vanadium), EU surface soil concentrations should be compared to the Eco-SSL values for birds, mammals, plants and soil invertebrates in the professional judgment chemical-specific risk potential sections as evidence to support excluding/retaining the chemical as an ECOPC. In addition, for metals in which the terrestrial plant ESL is derived from Efronson et al. (1997), the risk potential discussions should be revised to include relevant information about the ESL confidence as assigned by the ESL source document (e.g., barium plant ESL is given a low confidence ranking).	Individual EU Volumes, Main Text and Attachment 3, will be revised as suggested in this comment for those chemicals that have available Eco-SSLs or confidence rankings for effects on plants.
Terrestrial	EPA	General	EU G17	Vols 3-15 Terrestrial EU	EU G17. Professional Judgment – Probability Plots: As noted numerous times in previous comments on the pre-draft EU volumes, probability plots have very low power to detect the occurrence of two populations, even with an uncensored data set. In cases where the number of samples is low, the expected difference between site and background is small (e.g., 2-3 fold), and/or the variability within the data set is large (these conditions typify many of the RFETS EU data sets) probability plots may not reveal clearly distinct distributions. Because of these limitations, probability plots, especially those with a limited number of samples and/or substantial censoring, should be given low weight in the weight of evidence evaluation. In addition, the chemical-specific professional judgment sections in each EU volume often present conflicting statements when summarizing log probability plots. These sections usually state that the probability plot "indicates a single background population range", but often also make reference to "anomalously high values" when describing data points that do not fall on the log-probability plot line. When "anomalous" values are present, it is not appropriate to conclude that the EU data set represents a single population. By definition, if some data points are outside of the expected range, the data set is not representative of a single population. In addition, even if there are no "anomalous" values, this does not	Individual EU Volumes, Section 4.0 Professional Judgment: The log-probability plots are only one line of evidence and are not given any additional weight relative to other lines of evidence. Text related to probability plots will be reviewed and revised if appropriate for accuracy.

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					necessarily mean that the single population is representative of background. In fact, in most cases, the statistical comparison to background has already shown that EU concentrations are higher than the RFETS background. The chemical-specific pattern recognition sections in professional judgment for each EU volume should be revised to present a more balanced discussion of the interpretation of the log probability plots.	
Terrestrial	EPA	General	EU G17	Vols 3-15 Terrestrial EU		Note: This is part of the above comment EU G17. Individual EU Volumes, Section 4.0 Professional Judgment: The log-probability plots are only one line of evidence and are not given any additional weight relative to other lines of evidence. Text related to probability plots will be reviewed and revised if appropriate for accuracy.
Terrestrial	EPA	General	EU G18	Vols 3-15 Terrestrial EU	EU G18. Uncertainties Associated with Eliminating ECOIs Based on Professional Judgment: In several EU volumes, this section concludes that the Professional Judgment evaluation has little effect on the overall risk characterization because "the ECOIs eliminated from further consideration are not related to site-activities in the EU and have very low potential to be transported from historical sources to the EU". These were only two of the lines of evidence used in the professional judgment. This paragraph should be updated to include the other lines of evidence used to support the decision to exclude ECOIs in the Professional Judgment (i.e., risk potential, comparisons to background).	Individual EU Volumes, Sections identified as Uncertainties Associated With Eliminating Ecological Contaminants of Interest Based on Professional Judgment (typically Section 10.3.3): If applicable, these sections will be revised to include other lines of evidence including comparisons to background and risk potential.
Terrestrial	EPA	General	EU G19	Vols 3-15 Terrestrial EU	EU G19. Sections 8 through 10, Units for Dose: In several instances, the units for calculated doses and TRVs are incorrectly reported as "mg/kg/BW/day". The text should be revised to present dose units as "mg/kg BW/day".	Individual EU Volumes: The dose units presented within the text will be revised to "mg/kg BW/day".
Terrestrial	EPA	General	EU G20	Vols 3-15 Terrestrial EU	EU G20. Section 10, HQ Summary Tables: Section 10.1 should be revised to clarify that the HQ summary tables draw attention to HQs calculated using default BAFs and default TRVs by shading these cells in grey.	Individual EU Volumes, Section 10.1 Chemical Risk Characterization, for those EUs where ECOPCs are identified, the following text will be added: HQs calculated using the default BAFs and HQs with Tier 1 and Tier 2 EPCs are provided in Tables 10.1 and 10.2 for each ECOPC/Receptor pair. Shaded cells within both of these tables represent default HQ calculations based on exposure and toxicity models specifically identified in the CRA Methodology.
Terrestrial	EPA	General	EU G21	Vols 3-15 Terrestrial EU	EU G21. Eco-SSLs as the Primary Source for Wildlife TRVs: The chromium TRVs selected for use in calculating wildlife ESLs are based on Sample et al. (1996). According to the CRA Methodology, the hierarchy for selecting wildlife TRVs identifies the Eco-SSL guidance as the first source of TRVs, while Sample et al. (1996) is the third source. Therefore, the chromium TRVs should be based on Eco-SSL TRVs rather than Sample et al. (1996). For chemicals that have been evaluated in the Eco-SSL guidance, ensure that the wildlife TRVs selected to derive ESLs are based on the Eco-SSL TRVs.	As the reviewer points out, additional Eco-SSLs are becoming available for select metals over the course of the past two years. The CRA is based on TRVs and other values that were available during the development of the CRA Methodology. Therefore, ESLs will not be revised. No changes will be made to the text.
Terrestrial	EPA	General	EU G22	Vols 3-15 Terrestrial EU	EU G22. Inclusion of Surface Water Ingestion in HQ Calculations: The CRA Methodology did not identify surface water ingestion as a significant exposure pathway for wildlife relative to ingestion of food items and incidental ingestion of soil. Therefore, it is not clear why ingestion of surface water is included in the intake calculations presented in Section 8.0. If ingestion of surface water is retained in the wildlife exposure calculations, the ecological sections of the CRA should be expanded to address the basis and the details of the assessment. These discussions should describe the basis for all exposure parameters, whether the intake estimates were calculated using the total recoverable or dissolved fraction for metals, and the differences, if any, in the underlying surface water data set utilized for Non-PMJM versus PMJM receptors. In addition, the text should clearly state that an ECOPC selection process was not performed separately for surface water, but that ECOPCs for surface water were assumed to be equal to those ECOPCs identified for soil. This assumption should be identified as a source of uncertainty.	The ingestion of surface water was identified as a potentially significant exposure route in the Site Conceptual Model (SCM) in the CRA Methodology (Figure 7.2). Individual EU Volumes, Section 8.0 Ecological Exposure Assessment, the following sentence will be added: Exposure to ECOPCs via the ingestion of surface water is also considered a potentially significant exposure route as presented in the CRA Methodology (DOE 2005).  In the Individual EUs, Section 7.1 Data Used in the Ecological Risk Assessment, describes the surface water data (using total recoverable) used in the ecological risk calculations. Section 8.1 Exposure Point Concentrations, describes the surface water EPCs were calculated for ECOIs that were identified as soil ECOPCs using the same statistical basis as determined for soil ECOPCs for both PMJM and non-PMJM.
Terrestrial	EPA	General	EU G23	Vols 3-15 Terrestrial EU	EU G23. Risk Characterization for ECOPCs with Inadequate Detection Limits: For several ECOPCs, the risk characterization sections make statements to the effect that, because an ECOPC was infrequently detected, or not detected within a particular EU or PMJM habitat patch, the risks are assumed to be low or negligible. This is only appropriate if the detection limits achieved were adequate to assess potential risks to terrestrial receptors. For example, detection limits for antimony in surface soil are often above the PMJM ESL (1 mg/kg). Therefore, it is not possible to derive risk conclusions for habitat patches with a large number of non-detects based	Individual EUs, Attachment 1 Detection Limit Screen, will be completely rewritten to address those analytes whose detection limits exceed the ESLs and if these analytes contribute to uncertainty of the overall risk estimate based on evaluating process knowledge and ecological risk potential in relation to detection limits. A summary of this information is included Sections 1.2 Data Adequacy Assessment, 10.3.1 Uncertainties Associated with Data Adequacy and Quality and 11.1 Summary and Conclusions of Data Adequacy.



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					solely on measured surface soil concentrations of antimony and the corresponding HQ values. The chemical-specific risk characterization sections should be revised to discuss the adequacy (or lack of adequacy) of the detection limits for infrequently detected ECOPCs. Any chemical with a low detection frequency but an inadequate detection limit should be identified as a source of uncertainty, and the text should not state that this chemical is not of concern.	
Terrestrial	EPA	General	EU G24	Vols 3-15 Terrestrial EU	EU G24. Section 7.2.3, Background Comparison, PMJM: This paragraph states that "background comparisons for PMJM receptors are conducted differently than for non-PMJM receptors" and that "the results of [the background] comparison are based on their location within PMJM habitat". As written, these statements are confusing and do not clearly identify the differences between background comparisons for non-PMJM and PMJM receptors. The paragraph should be revised as follows: "For PMJM receptors, the background comparison is performed using the same methods as for non-PMJM receptors, but the EU data set is restricted to soil samples from within PMJM habitat areas. Table 7.X presents the results of the PMJM comparison to background. ECOLs retained after the background comparison are evaluated further based on Professional Judgment (Attachment 3)."	Individual EU Volumes, Section 7.2.3 Surface Soil Background Comparisons, PMJM Receptors, the following text will be added: The background comparison for PMJM receptors is performed using the same methods as for non-PMJM receptors, but the EU data set is restricted to soil samples from within PMJM areas. Table 7.x presents the results of the PMJM comparison to background. Attachment 3 presents further discussion of the PMJM background analysis.
Terrestrial	EPA	General	EU G25	Vols 3-15 Terrestrial EU	EU G25. Additional ECOPC Selection Step for PMJM: After ECOPCs have been selected for PMJM receptors in Section 7, but before HQs are calculated in Section 10, a final ECOPC selection step is performed which identifies specific ECOPCs for each PMJM habitat patch, as follows: If all samples from the habitat patch are non-detect for an ECOPC, or if the patch-specific MDC is less than the PMJM ESL, the chemical is excluded as an ECOPC for that habitat patch and HQs are not calculated. First, this step is not clearly identified in either the EU report or the CRA Methodology. The CRA Methodology and EU report should be revised to include a description of this additional ECOPC selection step for PMJM. Second, as mentioned in the General Comments above, it is only appropriate to conclude that risks are low from ECOPCs that were infrequently or never detected if the detection limits achieved are adequate. Any chemical with a low detection frequency but an inadequate detection limit should be identified as a source of uncertainty. Please revise the text to remove any statements H111 that definitively indicate this chemical is not of concern.	Individual EU Volumes, Section 7.2.6 Summary of Surface Soil Ecological Contaminants of Potential Concern, PMJM Receptors, the following text will be added: ECOLs were removed from further evaluation in the ECOPC identification process based on one of the following: (note there are no changes to numbers 1 and 2), 3) the ECOL concentrations within the PMJM habitat in this EU were not statistically greater than those from background surface soil.  After an ECOPC is identified, HQs are calculated for each PMJM patch. If ECOPCs were detected at concentrations lower than the ESL, or not detected, HQs are not presented. A comparison is also made between those analytes not detected and ESLs. Attachment 1 Detection Limit Screen, will be completely rewritten to address those analytes whose detection limits exceed the ESLs and if these analytes contribute to uncertainty of the overall risk estimate based on evaluating process knowledge and ecological risk potential in relation to detection limits. A summary of this information is included Sections 1.2 Data Adequacy Assessment, 10.3.1 Uncertainties Associated with Data Adequacy and Quality and 11.1 Summary and Conclusions of Data Adequacy.
Terrestrial	EPA	General	EU G26	Vols 3-15 Terrestrial EU	EU G26. Use of Geometric Mean TRVs for Antimony and Lead: As stated in previous comments on the pre-draft CRA, the alternate wildlife TRVs selected (i.e., the geometric mean of all the Eco-SSL NOAELs and all the Eco-SSL LOAELs) are not appropriate for use. The Eco-SSL report identifies a procedure for selecting the most appropriate TRV and use of the geometric mean of the NOAELs for reproduction and growth is only appropriate if this value is below the lowest bounded LOAEL for reproduction, growth, and mortality effects. The selection of the geometric mean of the LOAELs for reproduction, growth, and mortality as an alternate TRV is not scientifically defensible and results in a value that is likely to be significantly higher than the lowest bounded LOAEL. These geometric mean TRVs are not appropriate to use as alternative TRVs and should be removed.	Individual EU Volumes, Ecological Toxicity Assessment (typically Section 9.0): Geometric mean TRVs for antimony and lead will no longer be used as alternative TRVs in the risk characterization.
Terrestrial	EPA	General	EU G27	Vols 3-15 Terrestrial EU	EU G27. Alternate TRVs for Nickel: In several EU volumes, Attachment 5 states that alternative TRVs for birds and mammals were selected from Sample et al. (1996), but provides no information on the underlying basis of these alternate TRVs (i.e., study species, endpoint type, exposure duration, magnitude of the observed effects). The discussion of alternate TRVs for nickel should be revised to include sufficient detail to support the conclusion that the alternate TRVs provide a better estimate of potential risks, compared to the default TRVs identified in the CRA Methodology.	Individual EU Volumes, Attachment 5 will be expanded to include more detail on the alternative TRV for nickel.
Terrestrial	EPA	General	EU G28	Vols 3-15 Terrestrial EU	EU G28. Attachment 5, Uncertainty Discussion TRVs for Tin: The discussion of uncertainties in the wildlife TRVs for tin should be revised include a discussion of the potential uncertainties and biases associated with the use of TRVs based on tributyltin.	Individual EU Volumes, Attachment 5 will be expanded to include more detail on the uncertainties in the wildlife TRV for tin that is based on tributyltin.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
Terrestrial	EPA	General	EU G29	Vols 3-15 Terrestrial EU	<p>EU G29. Proposed LOAEL TRV for Bis(2-ethylhexyl)phthalate: The chemical-specific uncertainty analysis for bis(2-ethylhexyl)phthalate proposes a LOAEL TRV derived from O'Shea and Stafford (1980). However, there are several issues related to this alternative LOAEL TRV. First, when selecting alternate TRVs it is important to review the primary citation rather than simply relying on information extracted from a secondary source such as ECOTOX. In this case, the exposure route and exposure frequency identified in ECOTOX (i.e., "via capsules daily"), and cited in this section, is incorrect. A review of the primary citation shows that bis(2-ethylhexyl)phthalate was dissolved in corn oil and mixed into a commercial bird diet which was provided ad libitum throughout the duration of the study. Second, the selected LOAEL (25 ppm) from this study represents the exposure at which a statistically significant increase in body weight for adult birds was seen. An increase in adult body weight is usually not considered to be an adverse effect or directly related to potential population-level impacts. Thus, this alternate LOAEL TRV is of limited use in evaluating risks to bird populations at RFETS from ingestion of bis(2-ethylhexyl)phthalate. Lastly, the calculation of the dose-based TRV from the selected study LOAEL (25 ppm) is not correct. The study LOAEL (25 ppm) is reported as mg of chemical per kg food. In the EU report text, the food ingestion rate for the American robin, which was used to convert the LOAEL concentration to a dose, is incorrectly reported as 1.52 mg/kg BW/d. The Wildlife Exposure Factors Handbook (USEPA 1993) reports a food ingestion rate for the American robin of 1.52 g/g BW/d (wet weight basis). Assuming that the study LOAEL dietary concentration is reported as dry weight, and assuming a percent moisture content of 5%[4], the correct dose-based TRV is calculated below. As seen, the correct dose-based TRV is 6 times lower than the TRV reported in this section (214 mg/kg BW/d).  <math display="block">\text{Dose} = \text{Cdiet} \cdot \text{CF} \cdot \text{IRfood} = 25 \cdot (1 - 0.05) \cdot 1.52 = 36.1 \text{ mg/kg BW/d}</math> Where:  Dose = exposure dose (mg/kg BW/d)  Cdiet = exposure concentration in diet (mg/kg food dry weight)  CF = dry weight to wet weight conversion factor [equal to 1 - % moisture]  IRfood = food ingestion rate (kg food wet weight/kg BW/d)</p> <p>Please remove the LOAEL from the risk assessment. An alternate LOAEL or discussion should be provided in determining risks associated with this chemical. It is recommended that a review of laboratory blanks be completed to determine whether the concentrations can be attributed to laboratory contamination.</p>	<p>In Individual EUs, Attachment 5 Chemical-Specific Uncertainty Analysis: Where bis(2-ethylhexyl)phthalate is identified as an ECOPC (for example in NNEU), Toxicity Reference Values, the following text will be included: The effect of increased body weight on the health of bird populations is questionable. Bis(2-ethylhexyl)phthalate commonly causes an increase in liver weight in mammals, thus, it can be assumed that the same may be true in birds. Therefore, the resulting TRV can be used as the LOAEL for the risk characterization assuming that any predicted increase in body weight may be attributable to increases in organ weight. It is unknown what effect the increase of organ weight in birds may have on the assessment endpoints, however, LOAEL-based HQs serve to provide risk managers with an additional line of evidence with which to make risk management decisions. Potential adverse effects predicted for bird populations from exposure to bis(2-ethylhexyl)phthalate are uncertain and should be reviewed in terms of quality of toxicological information available.</p>
Terrestrial	EPA	General	EU G30	Vols 3-15 Terrestrial EU	<p>EU G30. Basis of Uptake Models Used to Estimate Total PCB Tissue Concentrations (Attachment 5): As written, the basis of the underlying uptake equations for plant, invertebrate and small mammal tissues is unclear. The first sentence of this section states that a regression equation was used to estimate plant tissues, and then the subsequent paragraph states that the soil-to-plant and soil-to-invertebrate BAFs are based on log Kow. While Attachment 4 presents a BAF for plants (<math>\text{C}_{\text{plant}} = \text{BAF} \cdot \text{C}_{\text{soil}}</math>) and a regression equation for invertebrates (<math>\ln \text{C}_{\text{invert}} = a + b \cdot \ln \text{C}_{\text{soil}}</math>). The text and tables should be revised to be consistent and text should be revised to provide a clearer description of the basis of the uptake models used to estimate tissue concentrations for Total PCBs.</p>	<p>Individual EU Volumes, Attachment 5 will be revised so that the basis of the uptake models used to estimate PCB tissue concentrations is consistent in both the tables and text.</p>
Terrestrial	EPA	General	EU G31	Vols 3-15 Terrestrial EU	<p>EU G31. IHSS Identification in Topographic Maps (Figure 1.2 of each EU volume): Because topographic contour lines and IHSS boundaries are both shown as brown lines, it is difficult to distinguish contour lines from IHSS boundaries. To address this issue, IHSS boundaries should be shown as black lines and contour lines should be shown as brown lines. In addition, each IHSS should be labeled with the appropriate IHSS, OU or PAC identifier (see NNEU Figure 1.2 in the Agency Review Draft EU volume for an example of the IHSS identifiers).</p>	<p>Individual EU Volume Figures: The color of the contour lines will be changed so that the IHSSs are more clearly defined. All historical buffer zone IHSSs are delineated and labeled on Figure 1.2 of Appendix A, Volume 2 of the RI/FS Report.</p>
Terrestrial	EPA	General	EU G32	Vols 3-15 Terrestrial EU	<p>EU G32. Ecosystem Characterization: This section should be reorganized into the general receptor groups addressed in the ecological risk assessment – 1) Terrestrial Plants and Invertebrates, 2) Non-PMJM Small Home Range Wildlife Receptors, 3) Non-PMJM Large Home Range Wildlife Receptors, and 4) PMJM. In addition, the text makes qualitative statements regarding ecological communities at RFETS, but it is not possible to determine if these statements are applicable to all EUs or only a subset of EUs. Finally, qualitative statements that ecological populations at RFETS are "diverse and healthy" should be supported by tabular or graphical presentations of the population/community metrics evaluated as part of the biomonitoring evaluations (e.g., songbird diversity indices for the 8 observation years at RFETS).</p>	<p>Individual EU Volumes, Section 10.2 Ecosystem Characterization: The risk characterization does not depend on the information in this section being organized into general receptor groups. No changes will be made to the text regarding this comment. Qualitative statements regarding ecological communities at RFETS includes all EUs. No changes will be made to the text regarding this comment. In Section 10.2 Ecosystem Characterization, the 1st paragraph, the following text will be added: Although a comprehensive compilation of monitoring results has not been presented, the annual reports of the monitoring program provide localized information and insights on the general health of the RFETS ecosystem.</p>

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
					compared to a representative reference area).	
Terrestrial	EPA	General	EU G33	Vols 3-15 Terrestrial EU	EU G33. Attachment 3, Molybdenum, Risk Potential, 3rd sentence: The text concludes that "only the ESL for terrestrial plants is within the range of background concentrations". However, the NOAEL ESL for the insectivorous deer mouse (1.9 mg/kg) is lower than the ESL for terrestrial plants (2.0 mg/kg). Therefore, both ESLs are within the range of background concentrations. This sentence should be revised as follows: "Both the terrestrial plant ESL and the insectivorous deer mouse ESL are within the range of background concentrations."	Note: This comment is associated with text found in RCEU, LWNEU, WBEU, and UWOEU. This will be made to these EUs. (Note the following EUs did not identify Mo: WAEU, IDEU, SWEU, 15A, and LWOEU. The following EUs did identify Mo, but there was no section on risk potential for plants and wildlife: NNEU, IAEU, and UWNEU.) Although SEEU also has a molybdenum section on Risk Potential for Plants and Wildlife, the text in this comment is not present in this section.  In Individual EUs RCEU, LWNEU, WBEU, and UWOEU, Attachment 3, the section on Molybdenum, Risk Potential for Plants and Wildlife, the following sentence will be added: Both the terrestrial plant ESL and the insectivorous deer mouse ESL are within the range of background concentrations.
Terrestrial	EPA	General	EU G34	Vols 3-15 Terrestrial EU	EU G34. Chromium Ecological Toxicity: The text states that trivalent chromium ESLs are greater than hexavalent chromium ESLs (i.e., hexavalent chromium is more toxic than trivalent chromium). While it is true that inhalation of chromium VI is more toxic than inhalation of chromium III, as seen by the chromium Eco-SSLs, the same is not true for ingestion exposures. The bird and mammal Eco-SSLs, which are protective of ingestion exposures, show that the mammalian Eco-SSL for chromium III (34 mg/kg) is lower than the mammalian Eco-SSL for chromium VI (81 mg/kg). This discrepancy would not have occurred if the Eco-SSL TRVs had been used in the calculation of chromium ESLs (see general comment above). Discussions regarding the relative toxicity of chromium III and VI should be revised accordingly.	Individual EU Volumes, Attachment 5: This issue will be discussed in Attachment 5 in EUs where chromium is a concern.
Terrestrial	EPA	General	EU G35	Vols 3-15 Terrestrial EU	EU G35. Attachment 1, Detection Limit Adequacy, Section 1.2: This section compares detection limits to ecological screening levels (ESLs) not human health preliminary remediation goals (PRGs). Therefore, section text should be revised to refer to ESLs not PRGs.	Individual EU Volumes, Attachment 1, Section 1.2.1 Comparison of Maximum Reported Results for Nondetected Analytes and Analytes Detected in less than 5 Percent of Samples to Ecological Screening Levels, Surface Soil: reference to ESLs will replace PRGs.
Terrestrial	EPA	General	EU G36	Vols 3-15 Terrestrial EU	EU G36. Toxicity Equivalence Calculations Tables: missing table 1.10? identify validation qualifiers (e.g., JB) and how that effected the use and quality of the result.	Individual EU Volumes: Using the Industrial Area EU as an example, Tables 1.7 and 1.8 present the toxicity Equivalency Calculations for Dioxins/Furans for human health and ecological receptors, respectively. Validation qualifiers are presented in both tables. No changes will be made to tables.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	General	15B1	15B1	<p>This report presents the ecological risk assessment for the following 4 of 7 AEU: NN AEU; RC AEU; MK AEU, and SE AEU. The RC AEU, MK AEU, and SE AEU are located in buffer zone areas of the site away from the main industrial area. The RC AEU is currently a US Fish and Wildlife Service preserve. The NN AEU is downgradient from the former landfill, but hydrologically separated from the landfill retaining pond.</p> <p>The ecological contaminants of concern (ECOPC) identification process identified ECOPCs in surface water and sediment at the NNAEU and MK AEU. These included: surface water ECOPCs: barium (total), lead (dissolved), silver (dissolved), zinc (dissolved), pentachlorophenol, and phenanthrene at the NN AEU; and aluminum (total), cadmium (dissolved), selenium (total), and zinc (dissolved) at the MK AEU. ECOPCs for sediment included: aluminum, barium, iron, lead, benzo(a) anthracene, benzo(a) pyrene, benzo(g,h,i)perylene, chrysene, phenanthrene, and pyrene at the NN AEU; and aluminum, chromium, fluoride, nickel, and selenium at the MK AEU. No ECOPCs were identified in surface water and sediment at the RC AEU and SE AEU. However, CDPHE recommends that all ECOIs in surface water and sediment at the RC AEU and SE AEU evaluated in the professional judgment should be carried through to the risk characterization step. The overall conclusions for all AEUs that there is no or low potential for risk (or no significant risk) to aquatic life cannot be supported at the present time because of the following major reasons:</p> <p>1. The selected ECOPCs do not represent all ECOPCs because the ECOPC identification process needs to be revised in terms of detection limit screening, MDC screening, and acute ESL screening. 2. Inadequate characterization of potential risks in several areas, for example: acute and chronic risks; segregation of surface and subsurface sediment risks; inadequate detection limits to assess risks; frequency of exceedance screening criteria of 20%; inappropriate site-specific parameters such as the average water hardness; inappropriate use of alternate and site-specific ESLs. 3. Other drainage lines of evidence provide inadequate information regarding the previous studies in order to support the presented conclusions. 4. The discussion of uncertainties needs to provide a more balanced analysis of under- and over-estimations of risk. 5. The conclusions of the report as "no or low potential" for risk are too broad to capture the full extent of variations in risk estimates based on NOAELs, LOAELs, acute and chronic risks, screening ESLs and site-specific toxicity values, and surface/subsurface sediments. 6. The overall risk management goal of no significant risks needs to be defined (i.e., quantitatively).</p>	Volume 15B1 will be revised to address the concerns expressed in this general comment based on meetings and discussions with CDPHE and EPA. See responses to specific comments below for details relating to these revisions. The new section numbers are included in the comment responses, as appropriate, so the revisions can be linked back to the October 2005 Draft version of Volume 15B1.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	1	15B1	1. Section 1.1.1, page 1—Aquatic Exposure Unit Characteristics and Locations – The text in this section should clarify that closeout reports, NFAA, and disposition of IHSSs decisions were based on the human health risk criteria and did not take into consideration ecological receptors.	The requested change will be made in the second paragraph of Section 1.1, Aquatic Exposure Unit Descriptions.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	2	15B1	2. Section 1.1.5, page 9 – Site Conceptual Model – Please note the following comments on this section: (a) This section should briefly summarize exposure pathways that are quantitatively evaluated for both media (surface water and sediments) and exposure pathways that are not quantitatively evaluated with justification for not addressing those pathways (e.g., ingestion and inhalation).	A brief summary of the exposure pathways will be provided in the revised document in Section 1.1.4, Site Conceptual Model (previously Section 1.1.5). The exposure pathways were agreed upon in the CRA Methodology and reflect the most relevant exposure pathways for aquatic life. The ambient water quality criteria (AWQC) and sediment ecological screening levels (ESLs) are based on total exposure to aquatic receptors regardless of pathway.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	2	15B1	(b) Please provide additional details to support the statement, "wading birds and waterfowl were also considered important receptors.." Additionally, it is important to briefly summarize the various exposure pathways previously evaluated for wading birds and waterfowl in 1996.	A brief summary of the exposure pathways for wading birds and waterfowl that were evaluated in the 1996 watershed risk assessment will be provided in Section 1.1.4, Site Conceptual Model, of the revised document (previously Section 1.1.5).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	3	15B1	3. Section 1.1.6, page 10 – Data Description – Please note the following comments on this section: (a) Please clarify in the text that Attachment 1 provides detection limits of chemicals that were analyzed for and not detected or detected at less than 5% detection frequency. It does not provide comparison between the detection limits and ESLs for all ECOIs.	Text will be clarified in Section 1.1.5, Data Description, of the revised document (previously Section 1.1.6) to indicate that Attachment 1 provides a comparison of detection limits to ESLs for chemicals that were not detected or detected in less than 5 percent of the samples.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	3	15B1	(b) It would be beneficial to the reader if the text provides a brief summary of findings in Attachment 1; for example, a statement that detection limits for several ECOIs are significantly above the ESLs.	A summary of findings from Attachment 1 related to detection limits will be provided in Section 1.2, Data Adequacy.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	4	15B1	4. Section 1.2, page 13 – Data Adequacy – It is important to include a brief summary of potential limitations in the available data, if any. Additionally, ECOI- and media- specific data adequacy summary should be provided from Volume 2.	The requested change will be made.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	5	15B1	5. Section 2.1, page 14- Data Used in the Ecological Risk Assessment – An inappropriate approach is being used to address the total PAHs because the total PAH concentrations were calculated for an AEU if any individual PAHs were retained as ECOPCs for risk characterization. This approach has the potential to underestimate risks due to total PAHs. For example, even if all PAHs are less than their respective ESLs, the combined risk for all PAHs can exceed the ESL for total PAHs. Please revise the current approach for the total PAHs. It is also important to ensure that the appropriate approach is applied for PCBs and dioxins.	The requested change in approach for total PAHs will be made. The ECOPC screening process will consider individual PAHs and total PAHs. Dioxins and PCBs were not detected in the AEU for Volume 15B1 so no changes are required for those analytes.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	6	15B1	6. Section 2.2, page 15 – Identification of surface water and sediment ECOPCs – It is important to perform detection limit vs. ESL comparison for all ECOIs including those ECOIs with UTLs less than their ESLs, and ECOIs with detection frequency >5% but <100%. Additionally, mapping of ECOIs should indicate ECOIs with detection limits higher than ESLs.	The ECOPC Identification process was determined through the consultative process with the agencies and does not include the detection limit screening referred to in the comment. It is important to note that the calculation of UTLs includes non-detected samples (using 1/2 of the reported result as a proxy value) so detection limits are considered in the comparison of UTLs to ESLs. Notes will be added to the Section 2 ECOI figures that indicate if detection limits exceed ESLs for samples that are nondetects.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	7	15B1	7. Section 2.3.1, page 17 – ECOPCs for the NN AEU –Please note the following comments on this section: Surface water (a) Please eliminate all discussion regarding the potential risks associated with ECOPC identification process such as detection limit screening and background comparisons. For example, ECOIs that were below detection limits, it is stated that “these ECOIs were eliminated from further consideration in the NN AEU because they are unlikely to present risks to the population of aquatic receptors.” This statement should be eliminated because all chemicals below the detection limit are typically discussed in the uncertainty analysis, and these chemicals (i.e., those below detection limits) are considered to over- or underestimate potential risk (vs. “unlikely to present risk” as noted in the text).	The text in the revised document for Section 2.3.3 (previously Section 2.3.1) will be revised and statements about potential risk for nondetected ECOIs will be deleted. For ECOIs that were eliminated as ECOPCs based on the statistical background comparisons, the text will be revised to state, “These contaminants were eliminated from further consideration because they are not expected to present risks to the populations of receptors that inhabit NN AEU greater than the risk expected from local background conditions.”
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	7	15B1	(b) There are three chemicals that were detected in less than 5 percent of the samples (cadmium, benzo(a)pyrene, and pyrene). It is important to discuss in the text that detection limits for these chemicals are significantly above their respective ESLs. Additionally, it would be useful to state that this uncertainty will be addressed later in the risk characterization and uncertainty analysis.	A comparison of detection limits to ESLs for chemicals detected in less than 5 percent of the samples is provided in Attachment 1. Attachment 1 will be revised to provide more details about the detection limit comparison. In addition, text will be added to the revised document in Section 2.3.3 (previously Section 2.3.1) that indicates uncertainties related to detection limits are discussed in Attachment 1 and Section 6.1.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	7	15B1	(c) ECOIs for which MDCs were greater than their respective ESLs but the UTL EPCs were less than the ESLs, it is important to discuss the percentage of locations that exceed the ESL; for example, it is stated that beryllium occurred with a total concentration above the ESL at one location (vs. 1 out of how many total samples). Also, it appears that several samples were non-detect. These non-detect samples should be discussed in terms of comparisons between detection limits and ESLs (i.e., if detection limits are above the ESLs). Finally, these ECOIs (i.e., with MDCs were greater than their respective ESLs) should be retained as ECOPCs if they exceed the acute ambient water quality criteria (e.g. beryllium, selenium) as well as when they occur in the pond area (e.g., phthalates).	Each ECOI that had a UTL less than the ESL is mapped to determine if exceedances of the ESLs are located in ponds. Text will be added to Section 2.3.3. that discusses the comparison of proxy values used in the UTL calculations for these ECOIs to the ESLs. According to the CRA Methodology, the ECOPC identification process is based on chronic water quality criteria, not acute criteria, so no changes will be made to the ECOPC identification process.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	7	15B1	(d) In summary, ECOPC selection process for surface water should be repeated based on the above noted comments to include additional ECOPCs.	The ECOPC identification process was conducted according to the regulatory agency-approved CRA Methodology and no additional surface water ECOPCs will be added to NN AEU based on this comment.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	7	15B1	Sediment (e) Please do not discuss the potential risks associated with ECOPC identification process using background comparisons. Therefore, eliminate the following statement, "Therefore, manganese was eliminated from further consideration because it is unlikely to present risks to sediment receptor populations in No Name Gulch. The risk created from this metal does not exceed that posed by normal background conditions." These issues related to potential risks associated with background exposures are typically addressed in the uncertainty analysis. Moreover, it should be noted that elimination of chemicals based on background comparisons does not imply that those chemicals are unlikely to pose risk.	The text in Section 2.3.3 in the revised document (previously Section 2.3.1) will be revised to state "This contaminant was eliminated from further consideration because it is not expected to present risks to the populations of receptors that inhabit NN AEU greater than the risk expected from local background conditions."
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	8	15B1	8. Sections 2.3.2 to 2.3.4 page19 to 24- ECOPCs for the RC AEU, MK AEU, and SE AEU – Please modify these sections in accordance with the above noted comments on the NN AEU.	Section 2.3.1 (new section for RC AEU), Section 2.3.2 (new section for MK AEU), and Section 2.3.4 (SE AEU) will be revised in accordance with the comments/responses for NN AEU.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	9	15B1	9. Section 3, page 24 – Ecological Exposure Assessment – This section gives the impression that several exposure routes (direct contact, inhalation, and ingestion) are addressed quantitatively for the AEU evaluations. Please clarify the text by identifying the exposure pathways that are quantitatively evaluated.	The text will be revised to state, "It is assumed that aquatic life may be exposed to surface water and sediment-related ECOPCs primarily via direct contact with surface water and sediment."
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	10	15B1	10. Section 4.0, page 25 – Ecological Toxicity Assessment - Please note the following comments on this section: (a) The discussion of alternate toxicity values (AT) should be modified to address surface water and sediments separately because it does not apply to surface water. For example, acute ESLs for surface water do not represent alternate toxicity values.	The text in Section 4.0 will be revised to present separate discussions of sediment and surface water ESLs. In addition, references to acute criteria for surface water as "alternate toxicity values" will be deleted.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	10	15B1	(b) It would be more appropriate to identify ATs for sediments as LOAEL/LOEC based concentrations.	The term AT was included at the request of CDPHE and USEPA in the Draft version of the CRA to clearly identify these ESLs that were not presented in the CRA Methodology. The term "AT" will be removed and changed to LOEC for sediment or acute WQC for surface water, as appropriate.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	10	15B1	(c) The statement, "concentrations between the ESL and AT values are within the range of uncertain toxicity where adverse effects are occasionally observed" cannot be made in general for all sediment ESLs because the range of uncertain toxicity would be endpoint-dependent.	The NOEC/LOEC -based sediment toxicity values are based on survival of aquatic organisms. The range between them is generally considered to be an area of uncertain toxicity. No changes will be made to the text based on this comment.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	10	15B1	(d) It is important to discuss in this section the derivation of surface water ESLs using a hardness value of 100 mg/L as a default when selecting ECOPCs, and the use of different ESLs, using site-specific average hardness, for risk characterization. Additionally, justification is needed to support the use of water quality specific parameters such as the average hardness for site-specific ESLs, pH, and temperature.	Attachment 5 will be revised to provide details of the use of 100 mg/kg as a default hardness value for calculating ESLs for the ECOPC identification process, and the use of the AEU-specific mean hardness values for calculating ESLs for risk characterization.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	11	15B1	11. Section 5.0, page 26 – AEU-Specific Ecological Risk Characterization – Please note the following comments on this section: First step (a) The use of refined site-specific ESLs and ATs as a measure of the likelihood or extent of potential risks is inconsistent with the CRA methodology.	The CRA Methodology presents general guidelines for risk characterization. The use of site-specific ESLs is not inconsistent with these guidelines. No changes will be made to the document based on this comment.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	11	15B1	(b) It is necessary to systematically define low, moderate, and high potential chronic risks (base on HQs) using ESLs and site-specific refined ESLs. This approach, for example, can be similar to the approach for EUs. The acute risk exceedances of any magnitude and frequency should be emphasized and taken into consideration for risk characterization.	Chronic risks will be discussed using default ESLs and site-specific ESLs in terms of low, medium, and high risk. Exceedances of acute WQC will be discussed in detail, along with an analysis of the temporal aspect of those exceedances.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	11	15B1	(c) The default EPC of interest is the UTL. Therefore, other EPCs such as the UCL of the mean and MDCs should be considered as a part of the uncertainty analysis.	The requested change will be made to make the aquatic risk assessment similar to the terrestrial risk assessments in that HQ tables will show risks based on UTLs as the EPCs.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	11	15B1	Second step (d) A frequency of exceedance effect level of 20 percent as a screening criteria protective of population-level endpoint may not be appropriate for the following reasons (i) it does not take into account the nature of toxicity endpoint such as the acute effects; (ii) it does not account for the magnitude of HQs; and (iii) it does not take into consideration the various uncertainties such as the inadequacy of detection limits to estimate risks, i.e., detection limits significantly higher than ESLs.	The risk characterization step will be revised based on discussions with the regulatory agencies; references to the use of 20 percent exceedances as a screening criterion protective of population-level endpoints will be deleted.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	11	15B1	Fourth step (e) This step discusses the evaluation of ECOCs in other applicable fractions of the media in order to understand current and future conditions and spatial extent. Therefore, it would be appropriate to include the evaluation of surface and subsurface sediments separately (vs. surface sediments in the current text) because the subsurface sediments could represent future surface sediments.	As described in Section 5.0, concentrations of ECOPCs in surface soil adjacent to the streams will be used to evaluate potential future sediment conditions.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	11	15B1	(f) It is inappropriate to calculate the total PAHs for an AEU only if any individual PAHs were retained as ECOPCs for risk characterization. In order to account for the additive toxicity of PAHs, it is necessary to calculate the total PAHs concentrations irrespective of any individual PAHs retention as ECOPCs because even if all individual PAHs are less than their respective ESLs, the sum of all these PAHs can be above the ESL for total PAHs.	See response to CDPHE Specific Comment 5.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	11	15B1	Other/Drainage specific Lines of Evidence (g) It is stated that attachment 7 provides a summary of all previous studies. However, Attachment 7 only includes toxicity tests based on sediment. Please revise the document to include all previous studies.	Attachment 7 will be revised to include a study related to surface water toxicity.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	12. Section 5.1.2, page 31 – Risk Characterization for the NN AEU – Please note the following comments: (a) Tables 5.1 to 5.5 should be modified to address the following: (i) HQs based on screening ESLs as the default need to be included; (ii) Alternate toxicity values for surface water cannot be based on acute toxicity values. Therefore, acute HQs should be included in separate tables and there will be no alternate toxicity values for surface water; (iii) Alternate toxicity values for sediments should be called as LOAEL based toxicity values; (iv) Default HQs based on the screening ESLs and UTL EPCs should be differentiated from the uncertainty analysis HQs based on LOAEL based toxicity values (i.e., AT) and EPCs such as MDCs and UCLs of the mean; (v) sediment HQs should be separately presented for surface and subsurface sediments (vs. surface and total sediments); (vi) site-specific ESLs should not be derived using the average hardness value. It would be more appropriate to capture the site-wide variability in hardness by using a range of hardness values; and (vii) impact of inadequate detection limits on risk characterization.	Based on discussions with the regulatory agencies, HQs for surface water (entire CRA data set and post-1999 CRA data set) will be based on chronic ESLs and acute criteria (using site-specific mean hardness values, as appropriate) and HQs for sediment (surface sediment and total sediments) will be based on NOEC ESLs and LOEC values. Tables will be prepared for surface water and sediment, respectively, for each AEU that show HQs based on EPCs (i.e., UTLs) and sample-specific concentrations. For the sample-specific HQs, values will be presented separately for detects and non-detects (using 1/2 reported result as a proxy value for non-detects). HQ tables and risk assessment conclusions for each ECOPC will be reviewed and edited, where appropriate, based on discussions with USEPA and CDPHE. This response is applicable for all sub-comments within CDPHE Specific Comment 12.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	Surface Water ECOPCs Barium (total)	
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(b) Please modify Table 5.1 in accordance with the above noted Comment #12(a); for example, estimate HQs based on: acute and chronic toxicity values separately, site-specific ESL using a range of hardness values (vs. average hardness of 188 ), the default screening ESL, and separately for default assumptions and uncertainty analysis assumptions. Due to these limitations in the currently estimated HQs, it is premature to conclude that, "These HQ results indicate that there is no potential for risk from barium in surface water at the NN AEU."	See response to CDPHE Specific Comment 12(a).

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(c) For post-1999 surface water data, it is important to discuss the frequency of detection and the comparison of detection limits with ESLs. Due to the above noted limitations (bullet # 12b), it is premature to conclude that there is no current risk to aquatic life from barium concentration at NN AEU.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(d) In summary, it is premature to conclude that all chemical LOEs for barium support a no risk conclusion, especially, when the screening ESLs are exceeded in some habitat areas. The overall conclusions are too broad to capture the full extent of variations in risk estimates (HQs) based on the default assumptions and alternate assumptions for the uncertainty analysis as well as acute risks.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	Lead (dissolved) (e) For the reasons noted above in Comments # 12 (b) and (d) for barium, HQs for lead need to be revised and, therefore, it is premature to conclude that there is no potential for risk from lead in surface water at the NN AEU.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(f) Lead had a frequency of detection of 15.6 percent; therefore, it is important to discuss the adequacy of detection limits to assess risks, i.e., if detection limits are significantly above the ESLs.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(g) The last paragraph regarding the post-1999 data (only one sample) is misleading. The first two statements in this paragraph conflict with each other. The first sentence states that "current potential for risk to water column organisms is uncertain". The second sentence states that " ...all chemical LOEs for lead (dissolved) support a no risk conclusion." The second sentence should be removed.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(h) The overall conclusions that there is no potential for adverse effects are too broad to capture the full extent of variations in risk estimates (HQs) based on the default assumptions and alternate assumptions for the uncertainty analysis. Please modify the conclusions based on the revised HQs for acute and chronic risks.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	Silver (dissolved) (i) For the reasons noted above in Comments # 12 (b) and (d) for barium, HQs for silver need to be revised. HQs in the current report range from 1 to 15; thereby, indicating that there is significant potential for risk from silver in surface water at the NN AEU. Therefore, it is important to modify the conclusions reached in the text that risk to aquatic organisms from silver concentrations in NN AEU is low.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(j) Exceedance of 2 out of 5 detected values (i.e., 40%) cannot be considered as low frequency of exceedances. Therefore, this evidence cannot be used to support the conclusions of low risk.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(k) Currently calculated HQs of 1 to 15 in the text do not support the overall conclusions of low but uncertain potential for risk to aquatic life from silver in surface water at NN AEU. These conclusions should be revised based on the modified HQs as per the above noted comments. The revised conclusions should capture the full extent of variations based on the default and alternate assumptions for acute and chronic risks as well as other uncertainties such as detection limits and inadequate data availability, especially, post-1999.	See response to CDPHE Specific Comment 12(a).



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	Zinc (dissolved) (l) Please revise this section in accordance with the above noted comments for silver. It should be noted that it is inappropriate to interpret HQs less than 5 as low potential risks. This assumption does not take into account the nature of toxic endpoint.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	Pentachlorophenol (m) For the reasons noted above in Comments # 12 (b) and (d) for barium, HQs for pentachlorophenol need to be revised.	See response to CDPHE specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(n) Please revise the overall conclusions that there is low but uncertain potential for adverse effects to aquatic life from pentachlorophenol in surface water in the NN AEU in accordance with the above noted comments. The revised conclusions should capture the full extent of variations based on the default and alternate assumptions for acute and chronic risks as well as other uncertainties such as detection limits and inadequate data availability, especially, post-1999.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	Phenanthrene (o) For the reasons noted above in Comments # 12 (b) and (d) for barium, HQs for phenanthrene need to be revised.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(p) Please revise the overall conclusions that there is low but uncertain potential for adverse effects to aquatic life from phenanthrene in surface water in the NN AEU in accordance with the above noted comments. The revised conclusions should capture the full extent of variations based on the default and alternate assumptions for acute and chronic risks as well as other uncertainties such as detection limits. Moreover, it is important to emphasize that the post-1999 data conclusions of low potential for current risks can be better characterized based on the revised HQs.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	Sediment ECOPCs Aluminum (q) It is important to present the default risk estimates (HQs) based on screening ESLs and UTL EPC. Other assumptions such as the LOAEL based toxicity values (called ATs in the text) and EPCs (MDC and UCLs of the mean) should represent alternate assumptions for the uncertainty analysis. Additionally, HQs should be segregated based on surface sediments and subsurface sediments (vs. total sediments based on all depths). It is important to discuss the adequacy of detection limits to assess risks.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(r) Please eliminate conflicting statements regarding the conclusions about potential risks. For example, second paragraph concludes, "... it is unlikely that aluminum in sediment poses a potential for adverse effects to benthic organisms in the NN AEU." The overall conclusions in the last sentence state, "there is low potential for adverse effects to benthic communities attributable to this aluminum in sediment."	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	(s) It is not clear why the magnitude of HQ less than 5 is considered to represent low potential for risks. This assumption does not take into account the nature of toxicity endpoint.	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	Barium, iron, lead, PAHs (t) Please modify these sections in accordance with the above noted comments for aluminum. For these reasons, it is premature to accept the conclusions that there is a low potential for risks from these chemicals.	See response to CDPHE Specific Comment 12(a).

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	12	15B1	Other/Drainage Specific Lines of Evidence (u) This section does not provide adequate details to support the conclusions that "...there was no evidence of chemical stressor controlling factors to the ecology."	See response to CDPHE Specific Comment 12(a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	13	15B1	13. Section 5.1.3, page 45 – Weight of Evidence Conclusions – Overall, it is inappropriate to conclude that "the LOE gathered from the risk characterization generally agree that there is no or low potential for risk to aquatic populations within the NN AEU caused by contaminant chemistry alone." The discussions and the conclusions of this section need to be modified in accordance with the above noted comments regarding the calculation of HQs, toxicity values, etc. Examples of inappropriate weight of evidence conclusions are noted below:	Conclusions will be reviewed based on discussions with USEPA and CDPHE. Where appropriate, conclusions will be edited to reflect the agreements reached among the RFCA parties. This response is applicable to all sub comments under CDPHE Specific Comment 13.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	13	15B1	(a) It is inappropriately concluded that surface water ECOPCs showed low magnitude HQs for screening ESLs and/or ATs, except for zinc. These conclusions are not supported by the available evidence, as noted in the above comments.	See response to CDPHE Specific Comment 13.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	13	15B1	(b) Frequency of exceedance of <20% cannot be used to support the conclusions of low potential risks.	See response to CDPHE Specific Comment 13.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	13	15B1	(c) "Spatial distribution" line of weight of evidence does not provide adequate information to support any conclusions.	See response to CDPHE Specific Comment 13.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	13	15B1	(d) "Change over time" represents one of the most important lines of weight of evidence. However, a lack of recent (post-1999) data for ECOPCs prevents any meaningful analysis.	See response to CDPHE Specific Comment 13.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	13	15B1	(e) The conclusions that surface sediment MDCs were generally not different from the comprehensive sediment database and did not influence the potential risks to benthic organism communities is not supported by the ECOPC-specific risk evaluation, as already noted in the above comments.	See response to CDPHE Specific Comment 13.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	13	15B1	(f) Drainage-specific habitat and ecological studies provide inadequate information to support any conclusions.	See response to CDPHE Specific Comment 13.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	14	15B1	14. Section 5.2, page 47– Risk characterization of the RC AEU – Please note the following comments on this section: (a) ECOPC identification process should be repeated based on the above noted comments for surface water and sediments. These revisions are likely to identify ECOPCs, especially, for surface water.	The ECOPC Identification process followed the methodology agreed upon by CDPHE, USEPA and DOE. No ECOPCs were identified in the AEU. The RFCA parties agreed that no ECOPCs will be added to the RC AEU for the Final CRA.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	14	15B1	(b) Comments regarding the appropriateness of ECOIs, that are evaluated in the professional judgment step, to be evaluated as ECOPCs for risk characterization are provided below under Attachment 3.	Please see specific responses to CDPHE Attachment 3 comments.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	14	15B1	(c) The overall conclusions, "There is no potential for risk to aquatic populations within the RC AEU," cannot be supported even by the current evaluation where no ECOPCs are identified because it does not take into account the various uncertainties such as the inadequate detection limits and background risks.	The identification of ECOPCs constitutes a screening-level risk assessment that was conducted according to the agreed upon methodology. Accordingly, if no ECOPCs are identified, site-related risks are likely to be low. The conclusions for the RC AEU will not be revised based on this comment.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	15	15B1	15. Section 5.3, page 47– Risk characterization of the MK AEU – In summary, the overall conclusions, “.. there is no or low potential for risk to the aquatic populations within the MK AEU..” cannot be supported at this time based on HQ ranges of 1 to 61 for four surface water ECOPCs, aluminum, cadmium, selenium, and zinc, and HQs were 1 to 847 for five sediment ECOPCs, aluminum, chromium, fluoride, nickel, and selenium. Moreover, risk characterization for the MK AEU needs to be modified in accordance with the above noted Comments #12 (a) to (u) for the NN AEU.	Please see responses to the referenced comments. Conclusions will be reviewed following the revisions to the risk characterization process discussed in previous comments.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	16	15B1	16. Section 5.4, page 58– Risk characterization of the SE AEU – Please note the following comments on this section: (a) ECOPC identification process should be repeated based on the above noted comments for surface water and sediments. These revisions are likely to identify ECOPCs, especially, for surface water.	The ECOPC Identification process followed the methodology agreed upon by CDPHE, USEPA and DOE. No ECOPCs were identified in the AEU. The RFCA parties agreed that no ECOPCs will be added to the SE AEU for the Final CRA.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	16	15B1	(b) Comments regarding the appropriateness of ECOIs evaluated in the professional judgment step to be carried through as ECOPCs to the risk characterization step are provided below under Attachment 3.	Please see specific responses to the CDPHE Attachment 3 comments.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	16	15B1	(c) The overall conclusions, “ There is no potential for risk to aquatic populations within the SE AEU.” cannot be supported even by the current evaluation where no ECOPCs are identified because it does not take into account the various uncertainties such as the inadequate detection limits and background risks.	The identification of ECOPCs constitutes a screening-level risk assessment that was conducted according to the agreed upon methodology. Accordingly, if no ECOPCs are identified, site-related risks are likely to be low. The conclusions for the SE AEU will not be revised based on this comment.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	17	15B1	17. Section 6.0 to 6.5, page 58 to 64 – Uncertainties Associated with the Ecological Risk Assessment – Please note the following comments on these sections: (a) Section 6.1. Uncertainties associated with data adequacy and quality - It is not appropriate to conclude that there are no uncertainties associated with the available data. Please discuss the various limitations, assumptions and potential biases in the available data.	Section 6.1 will be revised to include a discussion of uncertainties related to data adequacy and data quality.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	17	15B1	(b) Section 6.2. Uncertainties associated with the ecological contaminants of potential concern identification – It is important to acknowledge the uncertainty associated with this process as the potential underestimation of risk.	The ECOPC screening process was designed to be conservative and to reduce the possibility of not selecting ECOPCs that should be evaluated in the risk characterization step. No changes will be made to Section 6.2 based on this comment.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	17	15B1	(c) Section 6.2.3. Uncertainties associated with development of ecological screening levels – It would be more appropriate to delete the last sentence of this section,” However, a consistently conservative bias helps to ensure that risks are not underestimated.” Alternatively, include examples of consistently conservative bias in site-specific and alternate toxicity values.	The last sentence in Section 6.2.3 (will be Section 6.2.2 in the revised document) will be deleted.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	17	15B1	(d) Section 6.3. Uncertainties associated with ECOPCs with elevated reporting limits – It is important to state that there is potential underestimation of risk when detection limits are above the ESLs.	A separate section describing uncertainties related to elevated reporting limits will not be included in the revised document. Uncertainties related to reporting limits/detection limits will be included in the revised document in Section 6.1, Uncertainties Associated with Data Adequacy and Data Quality.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	17	15B1	(e) Section 6.4. Uncertainties associated with the lack of toxicity data for ecological contaminants of interest – It is not appropriate to conclude that the sediment ECOIs of uncertain toxicity do not pose a potential for risk to surface water organisms. It would be more accurate to conclude the potential over- and/or under-estimation of risk, the extent of which is unknown.	A discussion related to chemicals that lack sediment toxicity information but have surface water ESLs will be added to Section 6.2.3 in the revised document (previously Section 6.4).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	17	15B1	(f) Section 6.5. Uncertainties associated with eliminating ecological contaminants of potential concern based on professional judgment – The available evidence is inadequate to support the conclusions that uncertainty associated with the exclusion of risk from these chemicals is low. These conclusions should be revised to state that this uncertainty could result in the potential underestimation of risk.	ECOIs were eliminated as ECOPCs in the professional judgment step for RC AEU and SE AEU primarily because no sources of contamination or patterns of release were identified in these AEU. Therefore, site-related risks are assumed to be minimal. No changes were made to the text in Section 6.2.4 (formerly Section 6.5).



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	18	15B1	18. Section 7.0, page 64 – Summary and Conclusions – It is not appropriate to conclude that, “there is no significant risk to aquatic life within NN AEU, RC AEU, MK AEU, and SE AEU.” These conclusions need to be modified in accordance with the comments noted above regarding the revised risk evaluation (i.e., ECOPC identification and risk characterization), and the inappropriate interpretation of the calculated HQs as representing no or low potential for aquatic risks. These revisions are likely to change the identified ECOPCs, calculated HQs, and the interpretation of aquatic risks. Therefore, the available information at this time is considered inadequate to determine the appropriateness of the presented conclusions.	The conclusions will be reviewed on a case-by-case basis following the changes indicated in the above comments.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	19	15B1	19. ATTACHMENT–1 - Detection Limit Screen – Please note the following general comments: (a) As already stated in the above specific comments, it is important to compare the detection limits of detected chemicals (i.e., detected at >5 % but <100 %) to the minimum ESLs.	Chemicals detected at concentration greater than the ESL have 95UTL calculations performed as part of the ECOPC selection process that take detection limits into consideration (one-half the reported values are used as proxy values for nondetects) as well as detected concentrations. No changes will be made to Attachment 1 based on this comment.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	19	15B1	(b) It is not appropriate to discuss the level of uncertainty associated with the detection limits that are above the ESLs throughout the attachment. In majority of cases, it is inappropriately concluded that the level of uncertainty is acceptable. Moreover, it is important to note that uncertainty cannot be defined as acceptable or unacceptable. The direction of the potential assumptions (uncertainty) is defined as over-estimation of risk, underestimation of risk, the extent of which is generally unknown. Please modify the discussions of this attachment accordingly.	Discussions of uncertainty will be removed from the discussions presented in Attachment 1.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	20	15B1	20. ATTACHMENT– 2 – Data Quality Assessment - CDPHE has not reviewed this attachment at this time.	No response necessary.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	21	15B1	21. ATTACHMENT– 3 – Statistical Analyses and Professional Judgment – Please note the following comments on this attachment: (a) It is important to discuss the statistical background comparison for sediment separately for surface and subsurface sediments. The depth interval of sediment is not clear in the text.	Sediment depth will be more clearly presented in the Attachment.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	21	15B1	(b) Professional judgment evaluation has resulted in an inappropriate elimination of all ECOIs in surface water and sediment as ECOPCs for the risk characterization step in the RC AEU and SE AEU. In summary, these ECOIs should be evaluated as ECOPCs in the risk characterization step for some of the major reasons noted below:	Based on the consultative process with the regulatory agencies, it was agreed by the RFCA parties that no ECOPCs will be evaluated for RC AEU and SE AEU.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	21	15B1	(i) It is important to specify in the text that only human health risk assessment evidence was considered to decide no further action (NFA) and ecological receptors were not included. Additionally, the evidence discussed regarding the PAC and historical IHSSs (e.g., nickel carbonyl disposal area for the RC AEU) do not provide adequate support for the conclusions drawn in the text that these are not likely sources of contamination.	The text in Section 4.2 will be clarified to indicate that NFAs were generally based on human health considerations. The text will also be revised to include additional information regarding the PAC and historical IHSS discussed in the comment in order to more fully support the conclusions reached in the professional judgment evaluation.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	21	15B1	(ii) Process knowledge indicated a potential for release of almost all ECOIs.	While many ECOIs were used at the site, in order for exposure to occur, a release must have occurred and a transport mechanism must be present to move the ECOI from the release point to the potential exposure point (e.g., an AEU). ECOIs were reviewed based on those criteria.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	21	15B1	(iii) Evaluation of spatial trends should not be based on the maximum background concentration. In addition, spatial trends should take into consideration the frequency of exceedance as percentages (vs. absolute number of exceedance). Please refer to the above comment regarding the inappropriateness of using a 20 percent cut-off for exceedance frequency. For example, it is not appropriate to consider >20% ESL exceedance by detected concentrations as a low frequency for exceedance.	See Response to CDPHE Specific Comment 11 (d).

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	21	15B1	(iv) Too much emphasis is placed on the pattern recognition evaluation using log-probability plots, and does not take into consideration the potential limitations associated with this approach (as per EPA comments on the EUs). Moreover, no discussion is provided regarding box and whisker plots for background comparisons. In majority of cases, box plots indicate that the site data significantly above the background. Also, it is important to differentiate between surface and subsurface sediments.	Please see previous responses for discussions regarding surface and subsurface sediments. Pattern recognition (probability plots), statistical background comparisons, and box plot analysis are all lines-of-evidence presented in Attachment 3. Conclusions based on these lines-of-evidence will be determined on a chemical-by-chemical basis.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	21	15B1	(v) The discussion on risk potential for benthic macroinvertebrates should be modified in accordance with the above noted comments on risk characterization (e.g., Comment #12).	See response to CDPHE Specific Comment 12 (a).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	21	15B1	(vi) The weight-of-evidence discussion for each ECOI in surface water and/or sediment concludes no or low potential for risks. These conclusions are inadequately supported by the weight-of-evidence, and need to be revised based on the modified risk characterization in accordance with our comments presented here. Additionally, it is not appropriate to eliminate the potential risks on the basis of natural variations. It would be more appropriate to include a discussion of elevated background concentrations (i.e., above ESLs) of ECOIs/ECOPCs and their contribution to potential risk.	It is important to consider background concentrations in determining if a chemical is likely to pose site-related risks to ecological receptors. No changes will be made to Attachment 3 based on this comment.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	22	15B1	22. ATTACHMENT– 5 – Alternate Toxicity Values and Site-specific ESLs – Please note the following comments on this attachment: (a) It is important to identify screening ESLs derived in the CRA methodology as the default ESLs for both surface water and sediment. These default ESLs for surface water are based on the chronic Ambient Water Quality Criteria and for sediments on NOAELs/NOEC.	The text in Section 2.0 will be revised to clarify that the CRA Methodology ESLs are based on chronic water quality benchmarks.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	22	15B1	(b) It is inaccurate to identify acute water quality standards as alternate toxicity values. In fact, the basis and interpretation of acute water quality criteria is very different from the chronic criteria.	See response to CDPHE Specific Comment 10 (b).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	22	15B1	(c) It is not appropriate to identify LOAEL/LOEC based toxicity values for sediments as alternate toxicity values. These values should be used to calculate LOAEL based HQs and can be presented as a part of uncertainty analysis.	See response to CDPHE Specific Comment 10 (b).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	22	15B1	(d) Chemical-specific and site-specific refinements to surface water screening default ESLs should be applied using the ranges of values for various parameters such as pH, temperature, and hardness (vs. averages ).	Based on the consultative process with the regulatory agencies, it was agreed that average values will be used for pH, temperature, and hardness. See response to CDPHE Specific Comment 10 (d).
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	23	15B1	23. ATTACHMENT– 6 – Chemical Risk Characterization Line of Evidence Methods – Please note the following comments on this attachment: (a) It is important to evaluate subsurface sediment as well (i.e., > top 6 inches) for current and potential future exposures.	Adjacent soils are used in the risk characterization to evaluate potential future exposures. No changes will be made based on this comment.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	23	15B1	(b) The total PAH concentration calculation should be modified in accordance with the above noted Comment # 5	See response to CDPHE Specific Comment 5.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	24	15B1	24. ATTACHMENT– 7 – Other/Drainage LOEs in Support of the Risk Characterization – Please note the following comments on this attachment: (a) Additional details regarding the various studies need to be presented to support the interpretation of risks.	Additional details pertinent to the risk assessment will be provided where available and appropriate.
NN AEU; RC AEU; MK AEU, and SE AEU	CDPHE	Specific	24	15B1	(b) Overall, the discussion of uncertainties associated with the various studies indicates high level of uncertainty which can result in over- or under-estimation of risk. Therefore, this line of evidence should be assigned a low weight-of-evidence.	The other/drainage LOEs are considered along with the chemical HQs in the final conclusions about risk for each ECOPC. No changes will be made based on this comment.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
NN AEU, RC AEU, MK AEU, SE AEU	EPA	Specific	V15B S1.	VOL 15B1	V15B S1. Page 2, Section 1.1.2, first paragraph: Add the following to the last sentence, "(located in the NW AEU)."	The requested change will be made. Note: The paragraph referenced in the comment will be in Section 1.1.1, NN AEU, in the Final CRA.
NN AEU, RC AEU, MK AEU, SE AEU	EPA	Specific	V15B S2.	VOL 15B1	V15B S2. Page 4, Section 1.1.3, No Name Gulch: It is stated that the remedy at the Present Landfill is expected to generate additional runoff compared to the historical runoff pattern. The description should be expanded to include a description of the anticipated surface water hydrology for No Name Gulch (e.g., runoff expected to create perennial conditions, runoff expected to create pools, etc).	Additional information related to future conditions will be provided for No Name Gulch. Note: Section 1.1.3 will become Section 1.1.2 in the Final CRA.
NN AEU, RC AEU, MK AEU, SE AEU	EPA	Specific	V15B S3.	VOL 15B1	V15B S3. Page 14, Section 2.1, Date Used in Ecological Risk Assessment: The approach presented for Total PAHs in sediment states that "total PAH concentrations were calculated for an AEU if any individual PAHs were retained as ECOPCs for risk characterization". This approach is not appropriate because there is the potential to overlook potential risks from PAHs if individual PAHs are not identified as ECOPCs. For example, if all individual PAHs are less than their respective ESL, but the sum of all these PAHs results in a total PAH value above the ESL. In addition, the approach presented in Volume 15B.1 is inconsistent with the procedure presented in Volume 15B.2. Section 2.1 in Volume 15B.1 should be revised to reflect a more conservative procedure. Volumes 15B.1 and 15B.2 should be revised to be consistent.	Total PAHs will be included in the ECOPC selection process regardless of whether individual PAHs are identified as ECOPCs. The discussions in both volumes will be revised to be consistent.
NN AEU, RC AEU, MK AEU, SE AEU	EPA	Specific	V15B S4.	VOL 15B1	V15B S4. Attachment 3 – Professional Judgment: The professional judgment has resulted in excluding all ECOIs as potential ECOPCs in the "buffer zone AEU's". For example none of the ECOIs (including the organic chemical PCP) evaluated in the professional judgment for Rock Creek were retained as ECOPCs. However, the components evaluated as part of the professional judgment constitute a mini-risk characterization (i.e., risk potentials are evaluated and in all cases risks are deemed to be low). The conclusions based on the 'professional judgment' appear to be appropriate and it is agreed that risks are low. However, based on the CRA Methodology process, the best professional judgment would conclude that these chemicals should be characterized as ECOPCs with the resulting risk conclusion for the COPEC as 'low'. In order to avoid confusion and to demonstrate that the CRA Methodology was followed, it is recommended that the sections be revised.	The RFCA parties agreed that no ECOPCs will be added to RC AEU or SE AEU for the Final CRA.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	General	1	VOL 15B1	Waterfowl and Wading Birds: For each of the AEU's in this volume, it is stated that Walnut and Woman Creek drainages provide a tool for determining the potential risk to wading birds and waterfowl that may use the AEU's that were not evaluated. While this approach would be useful for AEU's or portions of AEU's with similar ECOPCs and habitats, this approach is not appropriate when there are different ECOPCs and different habitat types for these AEU's. Please revise the text to indicate that the correlation of the results from the other AEU's for water birds may not be representative of the AEU-specific ECOPCs for the AEU's included in this volume. Thus, due to the potential for differences in ECOPCs and habitat use, continued monitoring of these receptors and resources may be performed and will be determined in the Integrated Monitoring Plan (IMP) or other appropriate decision document (i.e., Record of Decision).	Text will be added to provide information about the uncertainties associated with applying the Draft Watershed ERA results to a specific AEU.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	General	2	VOL 15B1	Temporal Trend Figures: The symbols on the figures are not clearly defined. Please insert the word, "triangles" into the text definitions (on the left side of the figures), "Closed points (triangles) represent detected concentrations" and "Open points (triangles) represent ½ of the reported value for the non-detects".	The symbols are accurate as presented so no changes will be made to the figures based on this comment.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific Comments - Section 5.2, McKay Ditch AEU, Risk Characterization	1	VOL 15B1	The text does not mention that both the surface water and sediment data sets are spatially limited. Please indicate there that while there is a minimal number of samples upstream, midstream, and downstream, there are wide stretches of the drainage without any sampling data. Depending on the chemical group and geomorphology, the level of uncertainty related to the limited spatial distribution is low to moderate.	Additional details related to data uncertainties will be added, as appropriate.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific Comments - Section 5.2, McKay Ditch AEU, Risk Characterization	2	VOL 15B1	The Risk Description of the MK AEU should indicate that a single drainage located near the IA tends to frequently have the highest HQ exceedances.	Spatial descriptions of exceedances will be added to the chemical-specific risk estimation discussions for the MK AEU.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific Comments - Section 5.2, McKay Ditch AEU, Risk Characterization	3	VOL 15B1	The risk characterization is missing for 4-methylphenol. Please revise the text to add the evaluation for this ECOPC.	4-methylphenol was eliminated as an ECOPC because the only detections of that chemical within the MK AEU were collected at background locations, indicating that the presence of 4-methylphenol is not due to site-related activities.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific Comments - Section 5.2, McKay Ditch AEU, Risk Characterization	4	VOL 15B1	Cadmium: Final paragraph: The risk characterization conclusion related to the potential for chronic risks is appropriate. However, the text should also discuss the potential acute risks. Please add an evaluation regarding potential for acute AWQC exceedances.	A discussion of the potential for acute exceedances will be added for cadmium.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific Comments - Section 5.2, McKay Ditch AEU, Risk Characterization	5	VOL 15B1	Zinc: Third paragraph: It is not agreed that all MK AEU data are within the range of background surface water concentrations as currently indicated in the text. A review of the temporal trend plot (Figure 5.16) indicates that detected concentrations for the on-site data tend to be higher than background. In addition, it is not agreed that "no temporal trends are evident in the pre-1999 data". While there are several sampling points that appear to represent a downward trend in 1995, concentrations in the spring of 1994 appear to be increased when compared to concentrations in spring and fall of 1992 (see Figure 5.16). Available data beyond 1994 are too limited for evaluation of trends. Please revise the text to indicate that due to the limited nature of the available post-1994 data, trends are uncertain.	The requested change will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific Comments - Section 5.2, McKay Ditch AEU, Risk Characterization	6	VOL 15B1	PAHs: Final paragraph: It is indicated that since all samples were less than the LOEC, risks to the aquatic community are likely to be low. However, it is not clear whether risks are low if the NOEC value represents a threshold. In addition, although not indicated on the corresponding table (Table 5.4), 75 percent of the non-detected samples have concentrations greater than the NOEC. In addition, the data are spatially limited. Please revise the text to add additional discussion related to the nature of the NOEC ESL and the uncertainties related to the detection limit.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific Comments - Section 5.2, McKay Ditch AEU, Risk Characterization	7	VOL 15B1	Figure 5.16: It is not clear how the maximum background concentration (represented by the upper green line) is designated since there are no sample points showing the maximum detected background concentrations shown on the line. Please verify that the line is correct and include the maximum detected sampling points.	The figure will be reviewed and revised, if needed.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	8	VOL 15B1	Ammonia: Please revise the text to mention that while data are too limited to assess whether there is an increasing or decreasing trend, the available post 1999 sample concentrations are greater than pre-1999 concentrations. It is indicated that risks are expected to be low due to the single exceedance of chronic AWQC. However, there are only three samples. Please revise the text to indicate that if it is assumed that the three samples are representative of typical concentrations in the East Landfill Pond (ELP), then the risks would be considered low. However, it is not known how frequent the chronic AWQC would be have been exceeded if additional data were available. In addition, the uncertainty related to the evaluation is significantly understated in the last sentence. Please revise the text to indicate that due to the limited available data, there is a high uncertainty related to this evaluation for the ELP. Lastly, the conclusion indicates that risks are low for the "aquatic community in NN AEU", however, there are no data to evaluate No Name Gulch. Please revise the text to clarify that the evaluation is related to the ELP only.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	9	VOL 15B1	Barium: Second Paragraph: The last sentence indicates that no samples exceed the NOEC or LOEC in background. However, Table 5.14 shows that 2 samples are greater than the NOEC. Please clarify.	The text will be corrected to state that two samples exceed the NOEC for barium.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	10	VOL 15B1	Lead: Second paragraph: It should be noted that the sediment LOEC HQ is less than 1, not equal to 1 as currently indicated.	The text will be corrected.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	11	VOL 15B1	Selenium: First Paragraph: Please indicate that the site surface water concentrations are greater than the background surface water concentrations. Also, clarify that the percents being discussed are related to the detected samples. the percents being discussed of the samples that are less than the LOEC (instead of "most of the samples"). Third paragraph: It is not agreed that the single post-1999 sample can be used to establish whether there is a trend in the data as currently stated. It is not clear that there are enough data to conclude that risks are low as currently indicated. It is indicated that selenium was not detected in the	The requested changes will be made.



EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
					one post-1999 sample that is available. Please clarify whether the detection limits were low enough to evaluate the chronic AWQC and revise the text if necessary. Since the chronic AWQC was exceeded at three locations, it is not agreed that the one post-1999 sample should be used to definitely conclude that risks are low. Instead it should be noted that while the one post-1999 sample indicate that concentrations may be below the chronic AWQC, if exceedances of the chronic AWQC were to continue at the three locations, then risks would be low to moderate. It should be noted that there is a high level of uncertainty related to this evaluation. Please revise the text.	
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	12	VOL 15B1	Silver: Last paragraph: It is not agreed that the limited data can be used to support the conclusions that risks are low. The same comments made for selenium apply to silver (trends cannot be established with one sample, data are too limited to make conclusions). Please revise the text.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	13	VOL 15B1	Zinc: First Paragraph: Please indicate that the site surface water concentrations are greater than the background surface water concentrations. It should also be noted that there was a decreasing trend observed based on data from 1991 to 1999. Third Paragraph: Figure 5.38 does not support the statement that is made regarding the locations with exceedances. There are no samples from the 'downstream' ephemeral drainage. Please revise the text. Last Paragraph: It is not agreed that the limited data can be used to support the conclusions that risks are low. The same comments made for selenium apply to zinc (trends cannot be established with one sample, data are too limited to make conclusions). Please revise the text.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	14	VOL 15B1	Bis(2-ethylhexyl)phthalate, Di-n-butylphthalate, Phenol, and Phenanthrene: A statement is made for each of these chemicals indicating that the detected concentrations above the chronic AWQC in the ELP were prior to the removal of pond sediments in 2005. The statement infers that the sediments were the source of the AWQC exceedances in surface water. However, since there are no current data for SVOCs in surface water, it is requested that the text also state that it is not clear whether the source of the chemicals may be in surface water discharging to the pond. For the four chemicals, please indicate that there is a high level of uncertainty related to the limited available data.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	15	VOL 15B1	Phenanthrene: Final paragraph: It is stated that chronic exceedances from one location were observed upstream of the ELP where all samples were non-detects. The statement is misleading and should clarify that detection limits were not low enough to detect the chronic AWQC in 74% of all samples. Currently the text indicates that there is 'some' uncertainty in the risk characterization. Please indicate that there is a moderate to high level of uncertainty related to this evaluation.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	16	VOL 15B1	PAHs: Please see comments on Volume 15B2 regarding recommendations for clarifying the discussion on the approach used for PAHs. The PAH insert provided in the previous comments for Volume 15B2 is also recommended for this volume.	The PAH insert that was provided will be added to the text.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	17	VOL 15B1	Ecosystem Data: It is stated that although No Name Gulch is downgradient of the pond, it is hydrologically isolated from the pond. While some of the gulch may be isolated (e.g., a gaining stream fed by groundwater seeps at downstream locations), it is not apparent that this is true for the upper or portions of the drainage. The landfill was constructed over the headwaters of the drainage and it appears that the landfill pond dam would continue discharge or seep water into the some portion of the gulch. Please clarify to provide a more accurate description of the hydrology associated with this drainage.	The description of No Name Gulch and its relationship to the East Landfill Pond will be updated.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	18	VOL 15B1	Table 2.2: Please add PCP to the table. In addition, the units are not presented on the table.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	19	VOL 15B1	Table 5.3: In the first footnote, change "silver" to "zinc".	The requested change will be made. Note: The change applies to Table 5.2 in the Final CRA.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	20	VOL 15B1	Table 5.7: In the first footnote, remove cadmium, and add lead and zinc.	The requested changes will be made.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	21	VOL 15B1	Table 5.8: Barium is incorrectly shown under the "Organic" heading.	Barium will be moved under the "Inorganic" heading.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Section 5.3, No Name Gulch AEU, Risk Characterization	22	VOL 15B1	Attachment 5, Table A5.3: Lead needs to be added to the table. Also, other errors were noted, please spell check and do editorial check on all tables in the attachment.	Lead will be added to Table A5.3 and the other tables will be reviewed and revised, as needed.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Attachment 1, Detection Limit (DL) Adequacy	23	VOL 15B1	While it is generally agreed that Categories 1 & 2 can be characterized as low uncertainty, the categories do not include an evaluation of the magnitude of the DL exceedances. In addition, the criteria used to determine Category 2 chemicals do not include an evaluation of the magnitude of the sitewide MDC exceedance. Therefore, although there is low uncertainty based on the criteria used, there may be data gaps associated with some chemicals that would be recommended in future monitoring at the site. For surface water, Categories 3 & 4 are based on the magnitude of the chronic AWQC exceedance, but do not include magnitude of the acute AWQC exceedance. Please revise the evaluation to include this criterion, or indicate that this aspect will be evaluated to determine inclusion of a non-detected chemical in future monitoring at the site.	A comparison of the maximum reported result for nondetects will be added for both chronic ESLs and acute criteria.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Attachment 1, Detection Limit (DL) Adequacy	24	VOL 15B1	Please revise the columns in the tables to clarify that the maximum concentration presented is the maximum detected concentrations.	The requested change will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Attachment 1, Detection Limit (DL) Adequacy	25	VOL 15B1	There is inconsistency between reporting "NA" and "ND" in the maximum concentrations column when all samples were non-detect on the tables. Please clarify the tables.	The tables will be revised to designate NA = Not applicable and ND = Not detected.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	GENERAL - Attachment 3, Professional Judgment	26	VOL 15B1	The text in each AEU- and media-specific section is generally adequate. However, the final paragraph always concludes with the sentence that "there is some uncertainty". This statement should be revised to include the range of uncertainties (e.g., "low to moderate", "moderate to high"). This text should then be reflected, along with the uncertainty rankings, in Section 1.2 of the main text.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	GENERAL - Attachment 3, Professional Judgment	27	VOL 15B1	The evaluation for risks to benthic macroinvertebrates only includes comparisons to the ESL. Please add a comparison to the LOEC.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	GENERAL - Attachment 3, Professional Judgment	28	VOL 15B1	<p>There were number instances of omissions and inconsistencies within this attachment. A few are noted below:</p> <ul style="list-style-type: none"> <li>For RC AEU, the Professional Judgment section is missing a discussion of aluminum in surface water (SW), iron in surface water, vanadium in surface water, and total PAHs in sediment. According to Table 2.1 (SW) and 2.2 (Sediment), all of these chemicals were retained after the UTL comparison, but were not included as part of the Professional Judgment.</li> <li>For RC AEU, the Process Knowledge section for arsenic states that "arsenic is unlikely to be present at RFETS"...which is inconsistent with Volume 2.</li> <li>The "site-specific" (i.e., hardness-adjusted) ESL presented in the Risk Potential section for multiple hardness-dependant chemicals is inconsistent with the values provided in Attachment 5 (Tables A5.1 and A5.3). In some instances, this may change the overall risk potential conclusion.</li> <li>For RC AEU, the text states that the only exceedance for selenium in sediment was for a station which was representative of background. Upon review of the maps (as provided in the Agency Review Draft), the station is located midstream, not upstream. It is not clear why a midstream sediment sample being included in the background dataset... Please clarify as it was intended that only upstream surface water and sediment stations would be classified as background.</li> <li>For RC AEU, statements in the Spatial Trends and Pattern Recognition sections for silver in sediment regarding the number of exceedances and stations do not match the map (as provided in the Agency Review Draft).</li> <li>For RC AEU, the MDC value presented in the Risk Potential section for silver in sediment doesn't match the MDC shown in Table 2.2.</li> </ul> <p>Please ensure that the document is reviewed for these and other inconsistencies prior to finalizing.</p>	Aluminum, iron, and vanadium were not statistically greater than background so were not carried through the Professional Judgment evaluations. Total PAHs were not carried through to the Professional Judgment evaluations because only one sediment sample had a total PAH concentration that exceeded the ESL. In that sample, only one PAH was detected (benzo[a]pyrene) and the detected concentration did not exceed the analyte-specific ESL. Attachment 3 will be reviewed for consistency with Attachment 5, Volume 2, and other parts of Volume 15B1 and revised, if needed. The background sample referred to in the comment was included in the background data set; the background data set that was agreed to by the RFCA parties is documented in the CRA Methodology (September 2005).

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
MK AEU, NN AEU, RC AEU, SE AEU	EPA	GENERAL - Attachment 3, Professional Judgment	29	VOL 15B1	The Professional Judgment notes that portions of the Roadway Spraying IHSS occurs in both the RC AEU and the SE AEU, but states that this historical IHSS is not a "likely source of contamination". However, in other EU reports the Roadway Spraying IHSS may be a source of PAHs and phthalates. A similar comment applies to the nickel carbonyl disposal area IHSS located within RC AEU. Please revise the text to note this information.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	GENERAL - Attachment 3, Professional Judgment	30	VOL 15B1	The Pattern Recognition sections continue to make statements that the probability plot indicates a "single background population". As noted in previous comments, while it may be appropriate to state that the data represent a single population, it is not appropriate to assert that this single population is representative of background (especially for those chemicals that have already been demonstrated to be statistically higher than background). Please remove the term background from these evaluations. Also, there are multiple instances of statements that the probability plot represents a single population with the exception of several anomalous values. As stated previously, both statements cannot be true...either the entire dataset represents a single population or it doesn't. Please revise the text to include all data in the interpretation of the probability plots.	The text describing probability plots will be revised as suggested.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	GENERAL - Attachment 3, Professional Judgment	31	VOL 15B1	The Risk Potential sections tend to focus only on the detected samples that exceed the ESL and do not address the detection limit adequacy when a large fraction of the dataset is non-detect. In many instances, the adequacy of the detection limits for non-detects will influence the overall risk potential conclusion (with regard to the confidence in the risk potential). Please revise the text to clearly identify when there are detection limit issues associated with the non-detected concentrations. Please also ensure that the confidence in the risk potential is clearly identified for all ECOPCs.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	GENERAL - Attachment 3, Professional Judgment	32	VOL 15B1	The Spatial Trends sections (particularly in SE AEU) make statements that site concentrations are "within background levels" based on a comparison to the MDC for background. While this statement is technically true, it is misleading. In most instances, it has already been established that site concentrations are statistically higher than background. Therefore, please revise the text to include a more accurate statement similar to the following: "...while site concentrations are statistically higher than background, the fact that the site MDC is within the range of background concentrations suggests that this shift in concentration is small..."	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	33	VOL 15B1	Page 11, Section 4.2, RC AEU: Total PAHs have not been included in the section. Please add PAHs.	Total PAHs were not carried through to the Professional Judgment evaluations because only one sediment sample had a total PAH concentration that exceeded the ESL. In that sample, only one PAH was detected (benzo[a]pyrene) and the detected concentration did not exceed the analyte-specific ESL. No changes will be made based on this comment.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	34	VOL 15B1	Page 12, Section 4.2, RC AEU: The bulleted list is not consistent with what is presented in Table 2.1 and 2.2. Please revise as appropriate.	The bulleted list will be made consistent with Tables 2.1 and 2.2.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	35	VOL 15B1	Page 13, Section 4.2.1, Aluminum in Sediment: The concentrations presented in the second paragraph and the third paragraph are inconsistent. Please verify and correct the text.	The second paragraph lists concentrations using all samples within the AEU (including background locations within the AEU). The third paragraph lists concentrations for all samples except the background samples collected within the AEU. No changes are required to the text.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	36	VOL 15B1	Page 14, Section 4.2.2, Arsenic in Sediment: The statement that arsenic is unlikely to be present in RFETS media is not supported. Volume 2 indicates that it is present in NNEU, IAEU, WBEU, and LWOEU. Please revise the text.	Statements in Attachment 3 will be made consistent with Volume 2.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	37	VOL 15B1	Page 18, Section 4.2.4, Risk Potential for Benthic Macroinvertebrates, Surface Water: The refined ESL concentration based on the site-specific hardness, 0.00371 mg/L is inconsistent with the concentration presented in Attachment 5. It does not appear that the MDC for cadmium is below the site-specific ESL. Please verify and revise the conclusions as appropriate. In addition, the text discusses the detected concentrations but fails to mention whether the non-detected samples had adequate detection limits to evaluate the ESL. Please revise the text to address this issue.	The text will be made consistent with Attachment 5.

EU	Source	Comment Type	No.	Comment Scope	Comment	RESPONSE
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	38	VOL 15B1	Page 22, Section 4.2.6, Risk Potential for Benthic Macroinvertebrates, Surface Water: The refined ESL concentration based on the site-specific hardness, 0.0053 mg/L is inconsistent with the concentration presented in Attachment 5. It does not appear that the MDC for lead is below the site-specific ESL. Please verify and revise the conclusions as appropriate. In addition, the text discusses the detected concentrations but fails to mention whether the non-detected samples had adequate detection limits to evaluate the ESL. Please revise the text to address this issue.	The text will be made consistent with Attachment 5.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	39	VOL 15B1	Page 24, Section 4.2.8, Silver in Sediment, Evaluation of Spatial Trends: The text and corresponding table/figure do not appear to match. The figure appears to indicate there are 8 exceedances at four stations. Please verify. It is indicated that the ESL was not exceeded for nine sediment samples at these four locations, but there appear to be three exceedances. Please verify and revise.	The text and figure will be made consistent.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	40	VOL 15B1	Page 24, Section 4.2.8, Silver in Sediment, Pattern Recognition: It appears that silver was detected in four, not two, of the 12 sediment locations. Please verify and correct the text as necessary.	The text will be corrected to say that silver was detected at four locations within the AEU.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	41	VOL 15B1	Page 24, Section 4.2.8, Silver in Sediment, Risk Potential for Benthic Macroinvertebrates: The MDC for silver (1.3 mg/kg) is inconsistent with the corresponding table. Please verify and correct the text, including the conclusions associated with this change, as needed.	The requested changes will be made.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	42	VOL 15B1	Page 26, Section 4.2.9, Zinc in Sediment, Risk Potential for Benthic Macroinvertebrates, last sentence: The intention of the statement is unclear since sediment data are assumed to be representative of current conditions. Please clarify or remove the statement.	The sentence will be deleted.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	43	VOL 15B1	Page 26, Section 4.2.10, Pentachlorophenol in Sediment, Evaluation of Spatial Trends: It is not appropriate to state that there is only one detection of PCP since all of the detection limits were above the ESL. Please revise the text to address this issue.	The statement about detection limits will be added.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	44	VOL 15B1	Page 27, Section 4.2.10, Pentachlorophenol, Conclusion: The conclusions do not assess the possibility that the presence of this anthropogenic chemical is from an unknown release by the facility. The first part of conclusion is inappropriate and should be removed since it is not the intention of the risk assessment to determine whether the chemical is the result of activities associated with RFETS. It is agreed that the available data appear to suggest that there is not major contamination in the area, and based on the available data, risks appear to be low. However, there is a moderate level of uncertainty related to this conclusion in that the detection limits were not low enough to truly assess ecological risks. Please revise the conclusions to limit the discussion to an assessment of the potential for risks.	The goal of the CRA is to determine if there are significant risks to aquatic receptors from site-related residual contamination at RFETS. Accordingly, one of the lines of evidence in the Professional Judgment evaluation is process knowledge. No changes will be made based on this comment.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	45	VOL 15B1	Page 34, Section 4.4.5, SE AEU, Dissolved Silver in Surface Water, Pattern Recognition: The text and corresponding table are not consistent. The table shows that there are 7 samples and 2 detections, not one sample as indicated in the text. Please verify and revise any conclusions as needed.	The text will be checked and revised if needed.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	SPECIFIC - Attachment 3, Professional Judgment	46	VOL 15B1	Page 34, Section 4.4.5, SE AEU, Dissolved Silver in Surface Water, Risk Potential for Water Column Organisms: The refined ESL concentration based on the site-specific hardness, 0.00104 mg/L is inconsistent with the concentration presented in Attachment 5. Please verify and revise the conclusions as appropriate. In addition, the text discusses the detected concentrations but fails to mention whether the non-detected samples had adequate detection limits to evaluate the ESL. Please revise the text to address this issue.	The text will be reviewed for consistency with Attachment 5 and revised, if needed.
MK AEU, NN AEU, RC AEU, SE AEU	EPA	Specific - Attachment 7, Other Lines of Evidence	47	VOL 15B1	Please revise the attachment to present and evaluate these significant concepts regarding lines of evidence: <ul style="list-style-type: none"> <li>A tabular summary of surface water toxicity test results.</li> <li>Toxicity test results need to include appropriate concentration summary statistics for the purposes of comparing with measured concentrations from toxicity test samples (i.e., sediment toxicity test concentrations for Pond A-1 should be compared to summary statistics for Pond A-1, not the entire AEU).</li> </ul>	The original report related to the surface water toxicity testing will be included on a CD in Attachment 7. Summary statistics will be provided for the ponds for comparison to sediment toxicity testing concentrations.



EU	Source	Comment Type	No.	Comment Scope	Comment	Response
Aquatic	EPA	Intro		VOLS 15B1 AND 15B2	Several of the issues identified below may change the calculated HQs and potentially influence the overall interpretation of aquatic risks. Therefore, until these issues are addressed it is not possible to determine if the risk conclusions presented for the AEUs are accurate. Because it is anticipated that several of the comments will result in changes to the HQs and overall conclusions, a thorough review of all AEUs was deferred until the document is revised. While some comments are made for all AEUs, the current review has focused on the portions of Volume 15B.1 and 15B.2 that are relevant to No Name (NN AEU) and North Walnut (NW AEU) Drainages (respectively). It is anticipated that many comments specific to these AEUs will also apply (directly or indirectly) to the other AEUs.	Volume 15B2 will be revised to address the concerns expressed in this general comment based on meetings and discussions with CDPHE and EPA. See responses to specific comments below for details relating to these revisions. Please note that some section numbers will change based on these revisions. The new section numbers are included in the comment responses, as appropriate, so the revisions can be linked back to the October 2005 Draft version of Volume 15B2.
NW AEU; SWAEU; and WC AEU	CDPHE	General	1	15B2	<p>This report presents the ecological risk assessment for the following 3 of 7 AEUs: NW AEU; SWAEU; and WC AEU. The NW AEU and SW AEU are located in the central portion of RFETS within the Industrial Area and the Buffer Zone, and encompass a variety of areas that were historically used for RFETS operations. The WC AEU is located in the south central portion of RFETS and is located in the Buffer Zone immediately south of the Industrial Area.</p> <p>The ecological contaminants of concern (ECOPC) identification process identified ECOPCs in surface water and sediment for the three AEUs addressed in this Volume 15 B2 and ECOIs were evaluated in the professional judgment.</p> <p>The overall conclusions for all AEUs that there is no or low potential for risk (or no significant risk) to aquatic life cannot be supported at the present time because of the following major reasons:</p> <ol style="list-style-type: none"> <li>1. The selected ECOPCs do not represent all ECOPCs because the ECPOC identification process needs to be revised in terms of detection limit screening, MDC screening, and acute ESL screening.</li> <li>2. Inadequate characterization of potential risks in several areas, for example: acute and chronic risks; segregation of surface and subsurface sediment risks; inadequate detection limits to assess risks; frequency of exceedance screening criteria of 20%; inappropriate site-specific parameters such as the average water hardness; inappropriate use of alternate and site-specific ESLs.</li> <li>3. Other drainage lines of evidence provide inadequate information regarding the previous studies in order to support the presented conclusions.</li> <li>4. The discussion of uncertainties needs to provide a more balanced analysis of under- and over-estimations of risk.</li> <li>5. The conclusions of the report as "no or low potential" for risk are too broad to capture the full extent of variations in risk estimates based on NOAELs, LOAELs, acute and chronic risks, screening ESLs and site-specific toxicity values, and surface/subsurface sediments. Several ECOPCs in sediments and surface water have substantially high HQs based on ESLs and alternate toxicity values. The magnitude of HQs is in 100s or 1000s in some cases. For example, Aroclor 1260 in surface sediment of SW AEU has ESL-HQ = 400 and AT-HQ = 10.</li> <li>6. The overall risk management goal of no significant risks needs to be defined (i.e., quantitatively).</li> <li>7. Please modify pond-specific risk assessment in accordance with the EPA and CDPHE comments on the IHSS Group NE-1 dated October 2005.</li> </ol>	<p>See response to CDPHE general comment on Volume 15B1 for details related to Items 1 through 6.</p> <p>For Item 7, it was agreed to integrate the pond-specific risk assessments into the main body of the CRA. Therefore, Attachment 8, Pond Specific Evaluation Findings, will be deleted from the CRA.</p>
Aquatic	EPA	General	V15B G1	VOLS 15B1 AND 15B2	GENERAL COMMENTS APPLICABLE TO VOLUMES 15B1 AND 15B2 V15B G1. Several of the General Comments presented for the terrestrial EUs also apply to Volume 15B. Please see Volume 3 through 14, General Comments EU G.1, EU G.4, EU G.17, EU G.23, and EU G.35.	See responses to the referenced comments.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
Aquatic	EPA	General	V15B G2	VOLS 15B1 AND 15B2	V15B G2. Section 1.1.6, Data Description: The Data Description sections do not clearly present the data used in the aquatic risk assessment. The general and AEU-specific data descriptions should be revised to add more detail regarding the general types of data used and the AEU-specific data that are used for each media. At a minimum, for the general data description (i.e., presented prior to the AEU-specific descriptions) should: 1) indicate that surface water are grab samples (or other as appropriate), and that both total and dissolved are used; 2) indicate the depth intervals for sediment; 3) indicate that for AEUs with Accelerated Actions, confirmation data is used. If appropriate, please clarify whether confirmation samples designated as "surface" in the risk assessment are actually subsurface (i.e., buried beneath clean backfill as is the case for confirmation 'surface' soil in the terrestrial EUs).	The text in Section 1.1.6 (Data Description) and/or Section 2.1 (Data Used in the Ecological Risk Assessment) will be revised to indicate the type of surface water samples that were collected and that either total or dissolved fractions are used as appropriate based on the chemical-specific water quality criteria requirements. Depth intervals for the sediment data used in the CRA will be indicated. A discussion regarding confirmation samples will be included to clarify the issue.
Aquatic	EPA	General	V15B G2	VOLS 15B1 AND 15B2	The AEU-specific discussions should be revised to: 1) indicate when an Accelerated Action has occurred in the AEU and indicate that confirmation data are being used; 2) if applicable, please clarify the approximate depth that the confirmation samples that are designated as 'surface' may be buried based on the specific Accelerated Action for the AEU; 3) as currently stated in the text, surface water and sediment samples from outside of current aquatic habitat areas were included to ensure that these areas would not contribute to future aquatic exposures in downstream locations. The text should be revised to note that inclusion of non-habitat samples also addresses the potential for these areas becoming aquatic habitat in the future (i.e., No Name Gulch where runoff is expected to increase in the future).	The text in Section 2.1 includes a statement that confirmation samples are used in the ERA. The text in Section 3.0 (third paragraph) includes a statement that ECOPCs in non-habitat areas could contribute to future exposure. No changes will be made based on this comment.
Aquatic	EPA	General	V15B G2	VOLS 15B1 AND 15B2	Because the process is different for the ECOPC process and the Risk Characterization process, it would be helpful to present two columns listing the different data types, one for ECOPC process and one for Risk Characterization process.	The text will be revised to clarify the data sets used for ECOPC identification and risk characterization. No changes will be made to the Section 1 tables based on this comment.
Aquatic	EPA	General	V15B G3	VOLS 15B1 AND 15B2	V15B G3. Data Adequacy Review: For several chemicals (e.g., North Walnut Creek: radium-228 in surface water; fluoride and carbazole in sediment), the dataset is limited or is not spatially representative of the aquatic habitat (e.g., data does not meet the minimal recommended criteria to perform the risk assessment because the majority of data collected from outside of the stream channel, or is disproportionately collected from stream channel and data from ponds limited). For example, figures for some AEUs (e.g., Figure 2.11, 2.12, 2.15) suggest that a significant portion of the dataset is collected from upland areas and outside of the aquatic habitat. In addition, the text refers to Figures 1.7 and 1.8 and suggests that these are the aquatic habitat areas. However, in most cases, there are no data from within the aquatic areas identified on these figures (also see Specific Comment for Page 8). It should be noted that the primary statistic of interest used in the aquatic evaluation is the 95% UTL, but is only appropriate based on the assumption that the data are representative of the habitat. Thus, if data are limited, an ECOI or ECOPC may be prematurely eliminated and potentially cause a Type 1 error. It recommended that the data distribution be more carefully reviewed prior to the elimination of ECOPCs and in the determination of risk potential. Alternate/additional data groupings, or other types of conservative assumptions for EPC calculations should be considered in cases where locations appear to be disproportional or outside of aquatic habitats. EPA representatives would like to discuss options available for situations where datasets are limited. In addition, any relevant sections of Volume 2, as well as the Data Description and Data Adequacy sections of Volume 15B should be revised to describe when data are located outside of aquatic habitat.	For all ECOIs eliminated based on the EPC-ESL comparison, the spatial distributions are mapped and examined. For those ECOIs where the data are not spatially representative of the entire AEU, the uncertainty in the risk assessment results based on this data limitation will be noted.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
Aquatic	EPA	General	V15B G4	VOLS 15B1 AND 15B2	V15B G4. Groundwater-to-Surface Water Discharges: The AEU risk assessments do not adequately describe or include an approach to evaluate the potential for groundwater to discharge to surface water. This is a complete pathway identified on the Site Conceptual Model for aquatic life. Please revise the AEU evaluation to include a discussion of this pathway and provide specific information on where groundwater is expected to daylight, resulting in a potentially complete exposure pathway for aquatic receptors. Also, see General Comments for Volume 2 (General Comment, V2 G3), and V15B G28 (below) for additional recommendations addressing this issue.	Surface water data are available, and were used in the risk assessment, either at springs/seeps or downstream from them. These data are representative of potential contamination from groundwater. Exposure to groundwater is not a complete exposure pathway. Only when groundwater becomes surface water is the pathway complete. Since all surface water at the site is included in the risk assessment, the groundwater to surface water pathway is evaluated. This point will be clarified in the introduction to the Risk Characterization Section (Section 5.0). Please also see responses to the referenced comments.
Aquatic	EPA	General	V15B G5	VOLS 15B1 AND 15B2	V15B G5. Spatial Distribution Maps: Currently, Section 2.0 provides maps of spatial distribution of concentrations grouped by chemical and grouped by AEU (i.e., 1 map per AEU per chemical). It is recommended that these maps be consolidated by presenting the results grouped by chemical for all AEUs on a single figure (i.e., 1 map per chemical). In addition to reducing the total number of figures, consolidating all AEUs in a single map provides information on any site-wide spatial trends.	Because ECOIs eliminated in the ECOPC selection process based on the EPC-ESL comparison are not the same for each AEU, no change will be made to the figures based on this comment.
Aquatic	EPA	General	V15B G6	VOLS 15B1 AND 15B2	V15B G6. Aquatic Exposure Pathways: Section 1.1.5, Section 2.0, and Section 3.0, state that "it is assumed that aquatic life may be exposed...via several routes (direct contact, inhalation, and ingestion) for the purposes of the AEU evaluations". However, the AEU risk assessment focuses only on direct contact exposures and does not address potential inhalation or ingestion exposure. The text should be modified to state that only direct contact exposures are evaluated quantitatively in the AEU report, and where appropriate, it should be clarified that ingestion exposures are only addressed for water fowl and wading birds.	Water quality criteria and sediment toxicity values are based on total exposure, not simply direct contact. However, for simplicity the text indicates that receptors are exposed through direct contact with contaminated media. Text will be added to state that ingestion exposures are addressed for waterfowl and wading birds.
Aquatic	EPA	General	V15B G7	VOLS 15B1 AND 15B2	V15B G7. Exclusion of Infrequently Detected Chemicals: In the ECOPC selection procedure, chemicals with MDCs above the ESL that were infrequently detected (<5%) were excluded as ECOPCs. However, in many cases, the detection limits achieved for these chemicals were higher than the ESL. Because the detection limits were not adequate for the purposes of characterizing ecological risks, it is not appropriate to conclude that these chemicals "are unlikely to present risks to the population of aquatic receptors". Rather, the text should be revised to indicate the correct interpretation, that the detection limits are not adequate to derive meaningful risk conclusions for these infrequently chemicals.	In many cases, the large majority of the detection limits are lower than or equal to the ESL. Attachment 1 will be revised to include a more detailed review of detection limits when discussing the removal of infrequently detected chemicals as ECOPCs.
Aquatic	EPA	General	V15B G8	VOLS 15B1 AND 15B2	V15B G8. Attachment 1 – Detection Limit Screen: The third column presents the "Total Number of Results" for each chemical presented. The number presented in that column is different than the number of samples that is presented for the same chemical used to identify ECOPCs. For example, Volume 15B.2, Table 2.5, Summary of the ECOPC Screening for Surface Water in South Walnut Creek indicates that there are 847 samples. However, Attachment 1, Table A1.2.SW AEU.1, indicates the total number of results for mercury is 1,417. Please clarify the apparent discrepancy for this and other chemicals, as appropriate.	The data will be reviewed and such discrepancies will be corrected.
Aquatic	EPA	General	V15B G9	VOLS 15B1 AND 15B2	V15B G9. Section 2.3, Selection of ECOPCs: In several places throughout the ECOPC summaries, the text makes statements that "there does not appear to be an unacceptable risk". Whether the potential risks posed to aquatic populations are acceptable or unacceptable is a decision that is made by the risk manager, not the risk assessor. The text should be revised to present a balanced description of the potential risks (low, moderate, high, or severe).	The requested changes will be made.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
Aquatic	EPA	General	V15B G10	VOLS 15B1 AND 15B2	V15B G10. Interpretation of Surface Water and Sediment ESLs: The toxicity assessment section (Section 4.0) currently includes a description of how benchmark exceedances are interpreted for the purposes of assessing potential risks. However, this discussion is only applicable to the interpretation of sediment exceedances and should not be applied towards the interpretation of surface water exceedances. For example, the text states that "concentrations between the ESL and AT values are within the range of uncertain toxicity were adverse effects are occasionally observed". While this statement may be true for sediment ESLs, it is certainly not true for surface water ESLs (i.e., concentrations between the chronic ESL and acute ESL should not be interpreted as being "within the range of uncertain toxicity"). Because the interpretation of exceedances differs for surface water and sediment, the discussion of how to interpret exceedances should be segregated by media and revised as appropriate.	The requested changes will be made.
Aquatic	EPA	General	V15B G11	VOLS 15B1 AND 15B2	<p>V15B G11. ECOPC Selection ESLs vs. Risk Characterization ESLs: Although not clearly stated in the text, the surface water ESLs for hardness-dependant metals used in the ECOPC selection process are different than the ESLs used to calculate HQs in the risk characterization. While the text is not clear, it appears that ESLs used to select ECOPCs were based on a hardness of 100 mg/L, and ESLs used to calculate HQs were based on the mean hardness for the AEU (e.g., 188 mg/L for NN AEU). There are two potential issues with this approach.</p> <p>First, neither the CRA Methodology nor the AEU report clearly identify why a hardness value of 100 mg/L was used as a default when selecting ECOPCs. According to Table A5.4, hardness tends to be highly variable within an AEU (e.g., Woman Creek AEU: range = 46.3 mg/L - 470 mg/L, mean = 162 mg/L). Therefore, the selection of a hardness of 100 mg/L for the purposes of selecting ECOPCs may not be adequately protective if a substantial fraction of water samples within an AEU have hardness values less than 100 mg/L. If more than 10% of the reported hardness values for the AEU are less than 100 mg/L, the default hardness value should be decreased to ensure that the ECOPC selection process is adequately protective. The text should be revised to clarify that surface water ESLs used in the ECOPC selection were based on a default hardness, identify what default hardness value was selected and why, and address any limitations of this approach.</p> <p>Second, it is not clear why surface water sample HQs were calculated using an average AEU hardness rather than the sample-specific hardness. As discussed above, hardness appears to be highly variable within an AEU. Therefore, use of an average AEU hardness to calculate HQs will tend to under-estimate risks for samples with hardness less than the average AEU hardness and over-estimate risks for samples with hardness greater than the average AEU hardness. To avoid this potential bias, HQs should be calculated using an ESL that is based on the sample-specific hardness. Hardness values should be available (or can be calculated, see comment below) for every sample analyzed for inorganic compounds.</p>	<p>The 100 mg/L hardness value was used as a default based on requests from USEPA and CDPHE. This will be noted in Attachment 5 of Volumes 15B1 and 15B2.</p> <p>Figures R2 and R3 present graphical evaluations of the uncertainty associated with using average hardness for risk calculations in the CRA for dissolved cadmium and silver (the observations are typical of all the metals with hardness dependent toxicity). The sitewide surface water data set was used for these figures. The figures show the concentrations of the metals versus the water hardness in the samples (hardness was calculated from the calcium and magnesium concentrations). Also shown on the figures are the hardness-specific chronic and acute ESLs calculated using the 50th percentile of the sitewide hardness (215 mg/L), and the chronic and acute ESLs calculated as a function of the actual sample hardness. In order to simplify the risk calculations, the CRA used the average hardness of each AEU to calculate AEU-specific chronic and acute ESLs for each ECOPC. Because the hardness of the water varies from sample to sample, and thus the hardness-specific ESL also varies, this simplification produces uncertainty. As shown in Figures R2 and R3, the greatest departure of the sample hardness-specific ESL from the 50th percentile ESL is in the low range of the hardness concentrations (&lt; 100 mg/L). In this low range of hardness, risks may be underestimated because the actual ESL for a sample (i.e., based on the sample-specific hardness) is lower than the 50th percentile ESL. Conversely, in the upper range of hardness concentrations, risks may be overestimated because the actual ESL for a sample (i.e., based on the sample-specific hardness) is higher than the 50th percentile ESL. Because the departure of the actual ESL for a sample from the 50th percentile ESL is greatest at the low hardness concentrations, in general, risks may have been underestimated. The degree of underestimation of risks would be large if the metal concentrations showed a decreasing trend with hardness concentrations, i.e., most of the high metal concentrations are at low hardness concentrations. However, as shown in Figures R2 and R3, there is no apparent relationship of metal concentrations to hardness, which tends to minimize the underestimation of risks. Overall, in the hardness range of 100 to 400 mg/L, the ESL based on sample-specific hardness does not differ appreciably from the 50th percentile ESL, especially compared to the fluctuations in the metal concentrations. Therefore, the use of average water hardness values to estimate risks for metals with hardness dependent toxicity in the CRA introduces only a small amount of uncertainty, and this uncertainty will be noted in the CRA in Section 5.0.</p>
Aquatic	EPA	General	V15B G12	VOLS 15B1 AND 15B2	<p>V15B G12. Sample-Specific Calculation of Hardness: According to the tabular summary of water quality parameters (Table A5.4), only one hardness result is available for the NN AEU. However, Volume 15B.1 Table 1.3 shows that there are 70 paired measurements of calcium and magnesium that could be utilized to estimate hardness to supplement the existing NN AEU data set. Based on the hardness ranges presented in Table A5.4, it appears that the hardness is highly variable. Therefore, it is not appropriate to assume that a single result from NN AEU provides an adequate measurement of hardness within the drainage. The following equation[1] can be used to estimate hardness from calcium and magnesium:</p> <p>Hardness, mg/L as CaCO<sub>3</sub> = 2.497 * [Ca, mg/L] + 4.118 * [Mg, mg/L]</p>	The formula provided in the comment will be used for determining an average hardness value for NN AEU. The AEU-specific hardness value will be presented in Table A5.4 (Attachment 5 of Volume 15B1). In addition, for Figures R2 and R3 cited above, hardness was calculated using the suggested formula.



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Aquatic	EPA	General	V15B G13	VOLS 15B1 AND 15B2	V15B G13. Default ESLs vs. Alternative ESLs: Attachment 5 presents a summary of the "alternative" toxicity (AT) benchmark values identified for surface water and sediment. For surface water, the default ESLs (as identified in the CRA Methodology) were usually based on the chronic Ambient Water Quality Criteria (AWQC). As presented in Attachment 5, ATs were usually based on the acute AWQC. The basis and interpretation of the acute AWQC is very different than the chronic AWQC. Therefore, it is important that AT not be interpreted as an "alternate" estimate of the default ESL. To avoid confusion, it is requested that text and tables presented in the risk characterization be revised to present the "chronic ESL" and the "acute ESL" for surface water.	The requested changes will be made.
Aquatic	EPA	General	V15B G13	VOLS 15B1 AND 15B2	For sediment, the default ESLs (as identified in the CRA Methodology) were selected to represent no effect levels or effects thresholds (e.g., No Effect Concentration, Threshold Effect Concentration, Effects Range-Low). As presented in Attachment 5, the ATs are representative of a lowest observed adverse effect level (e.g., Probable Effect Concentration, Effects Range-Medium) in order to bracket the estimated risks using an HQ approach. The approach is useful and appropriate, however, as written, effect based ESLs are presented as "alternatives" for no effect or threshold based ESLs. To avoid potential confusion, it is requested that the text and tables presented in the risk characterization be revised to present the "NOEC/Threshold ESL" and the "LOEC ESL" for sediment.	The requested changes will be made.
Aquatic	EPA	General	V15B G14	VOLS 15B1 AND 15B2	V15B G14. Site-Specific ESLs: The risk characterization section (Section 5.0) uses the term "site-specific ESLs" in numerous places. The term 'site-specific' may be interpreted in several ways (e.g., ESLs based on site-specific toxicity results). Please define the term as being used to describe surface water ESLs for hardness-dependant metals that have been adjusted to a specified AEU or sample-specific hardness. As mentioned in the general comment above, the ecological toxicity assessment section (Section 4.0) should be modified to clearly identify those chemicals where toxicity is dependant upon water quality (hardness, pH, temperature) and describe the approach used to calculate chronic and acute ESLs.	The text in Section 5.0 will be clarified. Please see responses to the comments referenced.
Aquatic	EPA	General	V15B G15	VOLS 15B1 AND 15B2	V15B G15. Recommended Tables of EPCs and ESLs: Section 3.0 is the exposure assessment section; therefore, this section should include a tabular summary of the ECOPC exposure point concentrations (EPCs) used in the subsequent risk characterization. Note: In accord with the CRA Methodology, the primary statistic of interest for the evaluation of aquatic receptor exposures is the 95th Upper Confidence Limit on the 90th percentile (UTL), not the 95th Upper Confidence Limit on the mean (UCL). The section and tables should clearly identify the primary statistic for use as the EPC.	Tables 3.1 and 3.2 will be added that present surface water and sediment EPCs, respectively. The text will identify the UTL as the statistic to be used as the EPC.
Aquatic	EPA	General	V15B G15	VOLS 15B1 AND 15B2	Similarly, Section 4.0 is the toxicity assessment section; therefore, should include a tabular summary of the ECOPC ESLs and 'ATs' used in the subsequent risk characterization. In addition, this section should include a brief description of how ESLs were calculated for ECOPCs that are dependant upon water quality parameters (e.g., hardness, pH, temperature). This section should clearly identify the nomenclature for how different types of ESLs will be identified in subsequent sections (i.e., acute vs. chronic ESLs for surface water, and NOEC/Threshold vs. LOEC ESLs for sediment).	Tables 4.1 and 4.2 will be added to present chronic ESLs and acute criteria for surface water and NOEC ESLs and LOEC values for sediment, respectively. The text in Section 4.0 will be revised to explain the terminology of the various benchmarks used in the Risk Characterization. Attachment 5 explains how hardness-dependent ESLs are calculated.
Aquatic	EPA	General	V15B G16	VOLS 15B1 AND 15B2	V15B G16. Use of EPCs to Calculate HQs: In the Risk Characterization (Section 5.0), HQs are presented in using two types of tabular formats. The first table format provides a summary of HQs based on three different EPCs – the MDC, the 95UTL, and the 95UCL (e.g., Table 5.1). The second table format provides a summary of the frequency and magnitude of HQ exceedances (e.g., Table 5.5). The AEU report correctly states that for aquatic receptors, the two most important factors in determining potential risks from ECOPCs are the frequency and magnitude of the HQ exceedances within an AEU. However, the EPC HQ calculations provide risk estimates for only the EPC, which does not provide any information on the frequency of potential HQ exceedances. Another limitation of the EPC approach is that surface water HQs for hardness-dependant ECOPCs are calculated by assuming that the average AEU hardness applies to all EPCs. As discussed above, a hardness adjustment based on an average AEU hardness may tend to bias the HQ (see general comment above). Therefore, the summary table that provides the frequency and magnitude of HQ exceedances based on individual samples is preferred over a summary table that provides HQs based on EPCs. This format also	The summary tables will be revised to present the frequency and magnitude of exceedances more clearly.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
					enables the calculation of HQs using ESLs that have been hardness adjusted on a sample-specific basis. It is recommended that the summary tables that show the frequency and magnitude of HQ exceedances (e.g., Table 5.5) based on individual samples be described and used to support risk conclusions presented in this section.	
Aquatic	EPA	General	V15B G17	VOLS 15B1 AND 15B2	V15B G17. Frequency and Magnitude Summary Tables: Currently, the frequency and magnitude HQ summary tables associated with Section 5.0 only present HQs based on the chronic ESLs for surface water and the NOEC/Threshold ESLs for sediment and do not provide analogous summaries based on the acute ESLs for surface water and LOEC ESLs for sediment. All tabular summaries of the frequency and magnitude of HQs should be revised to include both acute and chronic-based HQs for surface water and NOEC/Threshold and LOEC-based HQs for sediment.	The HQ tables will be revised to include acute WQC and LOEC sediment toxicity values.
Aquatic	EPA	General	V15B G18	VOLS 15B1 AND 15B2	V15B G18. Data Distribution Figures: While the data distribution figures (e.g., Volume 15B1, Figures 5.2 through 5.26) provide a graphical depiction of the frequency and magnitude of ESL exceedances, there is no information provided in these figures that is not already presented in the HQ summary tables (e.g., Volume 15B1, Table 5.2). For hardness-dependant ECOPCs, one limitation of these figures is that they do not account for potential differences in hardness between samples. It is recommended that these figures be replaced with a figure similar to the example in Figure C3. If these figures are retained, at a minimum, they should be revised to distinguish between detects and non-detects (see attached Figure C1 as an example).	The data distribution figures will be removed from the document and replaced with figures similar to the suggested Figures C1 through C3.
Aquatic	EPA	General	V15B G19	VOLS 15B1 AND 15B2	V15B G19. Interpretation of HQs: The approach utilized in the interpretation of HQs is not appropriate. Section 5.0 states, "adverse effects to aquatic populations from an ECOPC were not significant if fewer than 20 percent of all the samples exceeded the ESL values". Currently, the AEU reports conclude that if the magnitude of the detected HQs is less than 5 and/or the frequency of the detected exceedances is less than 20% the potential risks are low. However, these cut-offs do not take into consideration the intended application of the toxicity benchmarks. This is especially important in the interpretation of surface water ESL exceedances.	The risk characterization approach will be revised to consider multiple lines of evidence as opposed to reliance on these criteria. These multiple lines of evidence will be summarized in the risk assessment summary tables.
Aquatic	EPA	General	V15B G19	VOLS 15B1 AND 15B2	For surface water, because there are two types of ESLs (acute and chronic) conclusions regarding potential risks should be separated into acute risk potential and chronic risk potential. Depending upon the magnitude of the exceedance, even a single exceedance of an acute ESL has the potential to adversely impact populations. Because an acute AWQC is based on LC50 data (adjusted by a factor of 2), even an acute HQ of 2 could result in 50% mortality for some sensitive species. EPA guidance states that an exceedance frequency of more than once every 3 years (1/3*365, or less than 1%) is potentially unacceptable. Since the underlying dataset utilized in the AEU risk assessment encompasses about 15 years (1991-2005), roughly translated this means that even 5 exceedances of an acute AWQC in the post-1991 dataset, or 2 exceedances in the post-1999 dataset, have the potential to adversely impact aquatic organisms.	Conclusions based on comparisons to surface water criteria will be revised, taking into consideration the temporal aspects of the data and the underlying assumptions of both the chronic and acute WQC.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
Aquatic	EPA	General	V15B G19	VOLS 15B1 AND 15B2	In addition, when detection limits are higher than the ESL (i.e., detection limits are too high to assess risks), it is not possible to make definitive conclusions regarding potential risks. For example, in the case of Aroclor-1254 in NW AEU sediments, the exceedance frequency of the NOEC/Threshold ESL is 19% based on detects only, but could be as high as 70% due to inadequate DLs (see Table 5.5). When interpreting highly censored datasets (i.e., have a high frequency of non-detects), risks should be reported as a range of potential impacts with the low end of the range based on detected samples and the high end of the range based on all samples. The same approach, considerations, and discussions should also be used prior to eliminating ECOPCs.	Detection limit issues will be taken into account in the uncertainty analysis. In terms of eliminating ECOPCs, detection limits will be reviewed for infrequently detected ECOIs prior to their removal from the ECOPC list. Detection limits for non-detected ECOIs are reviewed in Attachment 1, Detection Limit Screen. These will be discussed in the uncertainty analysis where that evaluation indicates issues with a certain ECOI, but ECOIs that were never detected will not be retained as ECOPCs.
Aquatic	EPA	General	V15B G19	VOLS 15B1 AND 15B2	Finally, it appears that HQ summary tables and interpretations are based on HQs are rounded to the nearest whole integer. While an interpretation of HQs based on one significant digit is appropriate in many cases, use of two significant digits may be important for some chemicals and some receptors. Interpretations of HQ values must consider the basis of the underlying toxicity benchmark, including the type of toxicity endpoint, magnitude of the effect, and slope of the dose-response curve. In particular, interpretation of surface water HQs rounded to the nearest integer may not be appropriate for the purposes of evaluating risks based on acute AWQCs (e.g., an HQ of 1.4 could result in unacceptable adverse effects). To address this issue, HQs for aquatic receptors should be expressed and interpreted to two significant digits. In addition, the risk characterization sections should be reviewed to ensure that any discussions regarding HQs clearly identify the basis of the ESL (e.g., chronic ESL vs. acute ESL).	HQs for surface water ECOPCs will be expressed as two significant figures, and HQs for sediment ECOPCs will be expressed as one significant figure, per discussions with EPA and CDPHE.
Aquatic	EPA	General	V15B G20	VOLS 15B1 AND 15B2	V15B G20. Risk Characterization/Weight of Evidence Conclusions (Section 5.1): There are several issues related to Weight of Evidence Conclusions presentations: The summaries tend to over-generalize the results of the hazard quotient (HQ) process, and do not clearly differentiate when there is a hazard quotient (HQ) exceedance using the no effect ESL versus a HQ exceedance using an acute or probable effect concentration. For example, a summary of HQ exceedances for no effect or chronic effect ESL are grouped together indicating "there are only a few exceedances of both ESL and AT". As indicated in previous General Comments above, the conclusion of whether there is a risk should present and discuss effect-level HQ exceedances. In addition, generalized discussions indicating the "magnitude of an exceedance is low (e.g., HQs are all < 5)" are not appropriate. Depending on the chemical-specific 'AT', the effect level may indicate an acute risk even when the HQ < 5.	More detail will be added to the discussion of conclusions that focuses on the issues identified in the comments.
Aquatic	EPA	General	V15B G20	VOLS 15B1 AND 15B2	The "Frequency and Magnitude" of HQs summary tables presented in the risk characterization sections for each AEU (e.g., Table 5.5) do not include the "LOE Risk Conclusion", although footnotes on the tables suggest that the results were to be reported as 'low' or 'retained'. The tables should be revised to include the risk conclusion for each ECOPC (similar to the column that was included in the pre-draft version of these tables).	The more detailed HQ tables that will be included in the revised CRA will provide more data but do not provide conclusions. Conclusions will be summarized in new tables in Section 5.
Aquatic	EPA	General	V15B G20	VOLS 15B1 AND 15B2	For ECOPCs with a limited number of locations/samples, that are not spatially distributed (i.e., samples are partially/primarily from non-habitat areas), or that lack current data (i.e., post 1999), the text indicates that risks are "low", when due to the lack of available data a more appropriate conclusion may be that risks related to the chemical cannot be determined or are uncertain. The text should be revised based on conservative assumptions or data manipulations (as indicated in General Comment No. V15B G3) or indicate when data are too limited to provide a risk estimate due to the high level of uncertainty associated with these chemicals.	The level of uncertainty associated with the risks due to spatial or temporal representativeness issues will be noted in the conclusions for each ECOPC.
Aquatic	EPA	General	V15B G20	VOLS 15B1 AND 15B2	The lines of evidence do not include a discussion of whether a chemical was identified as an ECOPC for both surface water and sediment. The text should be revised to indicate when this occurs, and the results used in the weight of evidence to assess the overall exposure and risk conclusion based on an ECOPC being identified in both media.	The text will be revised as suggested.

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Aquatic	EPA	General	V15B G20	VOLS 15B1 AND 15B2	The risk characterization and Weight of Evidence do not integrate and discuss the results based on all representative receptor groups using an AEU (i.e., fish, invertebrates, amphibians). This is especially important for AEUs with effect-level HQ exceedances or when multiple ECOPCs are shown to have "low" risk. Please revise the risk characterization process and conclusions to address these issues.	Based on discussions with EPA and CDPHE, risk conclusions will be based on HQs (using chronic ESLs and acute criteria for surface water and NOEC ESLs and LOEC values for sediment), ecosystem data (e.g. previous studies such as toxicity testing), and risk information for waterfowl and wading birds from the Draft Watershed ERA.
Aquatic	EPA	General	V15B G1	VOLS 15B1 AND 15B2	It is recommended that the risk characterization process be revised to indicate when risk conclusions are inconclusive and should be designated as "retained" further analysis. This conclusion would be appropriate for ECOPCs with elevated effect-level HQs, spatial considerations (e.g., widely distributed, in a pond or other potentially high-use habitat), ecotoxicological information (e.g., bioaccumulative compounds, highly toxic), or if the data associated with the ECOPC is limited (including highly censored datasets with detection limits too high to evaluate risks).	The level of uncertainty associated with the risks due to spatial or temporal representativeness issues will be noted in the conclusions for each ECOPC.
Aquatic	EPA	General	V15B G21	VOLS 15B1 AND 15B2	V15B G21. Discussion of Other Drainage Lines of Evidence: In Section 5.0, the description of the Bioassay Analyses indicates that previous studies completed within RFETS included surface water and sediment toxicity tests. However, Attachment 7 only provides toxicity test results based on sediment. Please revise the document to include the results of the surface water toxicity tests and attach the laboratory data associated with all toxicity testing to the CRA.	The requested information will be provided where the data are available.
Aquatic	EPA	General	V15B G21	VOLS 15B1 AND 15B2	Wading birds and waterfowl are not consistently discussed within each of the AEUs. Although the rationale for not including the receptor group is not specifically captured in the CRA Methodology, the receptor group was not selected for the CRA because it was argued that risks to the wading birds and waterfowl receptors were already addressed in the 1996 Final Phase I RI/RFI for OU5. In that report, the potential for risks to water fowl are identified for several chemicals. It is recommended that a specific subsection be added to each AEU to discuss the results of the former risk assessment and summarize the current risk potential. This assessment should provide a specific comparison of the concentrations used to calculate risk to the currently reported chemical concentrations.	The requested analysis will be included in a specific subsection for each AEU, as available.
Aquatic	EPA	General	V15B G22	VOLS 15B1 AND 15B2	V15B G22. Page 14 (Volume 15B.1), Page 13 (Volume 15B.2), Section 2.1: For sediment, it is indicated that samples 'were collected from all depth fractions'. Please clarify the ranges of available 'depth fractions', and revise Volume B.2 provide the discussion regarding the different depths used for COPEC selection verses risk characterization (as presented in B.1).	All sediment was included in the ECOPC identification process and in the risk characterization. The risk characterization also included an evaluation of surface sediment since it is more relevant to exposure in the aquatic system. The text will be clarified.
Aquatic	EPA	General	V15B G23	VOLS 15B1 AND 15B2	V15B G23. Page 15 (Volume 15B.1), Page 14 (Volume 15B.2), Section 2.2, Second Step: Please clarify that the ECOPC selection process for sediment which includes the comparison of maximum detected concentration for sediment at any depth to the ESL.	The text will be revised to make this clarification.
Aquatic	EPA	General	V15B G24	VOLS 15B1 AND 15B2	V15B G24. Page 15, Section 2.2, Third Step: Please clarify that statistical comparisons against background are only made for inorganic or naturally occurring compounds.	The requested change will be made.
Aquatic	EPA	General	V15B G25	VOLS 15B1 AND 15B2	V15B G25. Page 16 (Volume 15B.1), Page 15 (Volume 15B.2), Section 2.2, Fourth Step: The text states that statistical parameters were not calculated "where sufficient data were unavailable". This sentence should be revised to clarify when data were deemed to be sufficient (e.g., N > 5, detection frequency > 20%). In addition, please clarify the approach for evaluating sediment, and how it differs from the ECOPEC selection process.	The requested change regarding sufficient data will be made. Sediment is evaluated in a manner consistent with the ECOPC selection process included in the CRA Methodology so no changes to the ECOPC selection process for sediment will be made.



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Aquatic	EPA	General	V15B G26	VOLS 15B1 AND 15B2	V15B G26. Section 2.3, Summary of ECOPCs for AEU: In several places throughout the ECOPC summaries, the text makes statements that "there does not appear to be an unacceptable risk". Whether the potential risks posed to aquatic populations are acceptable or unacceptable is a decision that is made by the risk manager, not the risk assessor. The text should be revised to present a balanced description of the potential risks (i.e., low, moderate, high, or severe).	The requested changes will be made.
Aquatic	EPA	General	V15B G27	VOLS 15B1 AND 15B2	V15B G27. Temporal Figures: For surface water, it is important for the risk characterization to not only consider the overall frequency and magnitude of any ESL exceedances, but also the temporal nature of any exceedances. For example, if the ESL exceedances all occurred within a relatively short time span or if there are any seasonal patterns or time trends (e.g., post-1991 vs. post-1999) associated with these exceedances. A figure that provides measured concentrations as a function of time would be a useful second tier risk characterization component for ECOPCs in surface water that exceed the acute and/or chronic ESLs. It appears that Volume 15B.1 was revised to include temporal figures. Volume 15B.2 should be revised to include temporal figures for ECOPCs. Based on the current figures presented, the interpretation of temporal trends is difficult since pre- and post-1999 data are shown on separate figures. It is requested that a format which displays the information needed to interpret overall trends be considered. An example of an improved format is provided in Figures 2 and 3 (attached to these comments).	Temporal trend figures similar to those provided will be included in the revised CRA.
Aquatic	EPA	General	V15B G28	VOLS 15B1 AND 15B2	V15B G28. Topography and Surface Water Hydrology: The following issues were noted in the general descriptions of the topography and surface water hydrology of the AEU drainages (Volumes 15B1 and 15B2, Section 1.1.3): It is stated that "streams and seeps at RFETS are largely ephemeral or intermittent", however subsequent sections indicate that both North and South Walnut creeks have continuous flow. The specific status of these streams should be verified and citations for the stream classifications (e.g., USGS Topographical Quad Maps) should be included, if available.	Both conditions exist: 1) the majority of streams at RFETS are intermittent or ephemeral (i.e., flow occurs periodically. Intermittent streams receive inflow from groundwater, whereas ephemeral streams flow from direct runoff only), and 2) North and South Walnut Creeks both have reaches on the eastern edge of the former IA that historically have had continuous flow (i.e., perennial flow), though flows in these stream reaches can also cease during extended dry periods. The status of the different reaches was verified with RFETS personnel familiar with the flow data and flow regimes at the site.  Citations for the different types of stream classifications will be provided as footnotes in Section 1.1.3 as listed below:  1) An ephemeral stream (defined by the U.S. Army Corps of Engineers) has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow. 2) An intermittent stream (defined by the U.S. Army Corps of Engineers) has flowing water during certain times of the year, when groundwater provides water from stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow. 3) Different stream classifications are defined per the Regulatory Program of the U.S. Army Corps of Engineers, Part 330 – Nationwide Permit Program, Final Notice of Issuance, Re-issuance, and Modification of Nationwide Permits. March 9, 2000 (online: <a href="http://www.wetlands.com/COE/NWP3defin.htm">http://www.wetlands.com/COE/NWP3defin.htm</a> ). 4) A perennial stream (defined by the U.S. Army Corps of Engineers) has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

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Aquatic	EPA	General	V15B G28	VOLS 15B1 AND 15B2	Each of the drainage summaries should be revised to include a brief, specific description of the streams that are receiving seep waters, groundwater discharges, and indicate whether discharges to surface water are expected to be from site-impacted areas.	<p>The drainage summaries will be modified to provide additional information regarding stream reaches that receive seep waters and/or groundwater discharges from site-impacted areas. It is noted that seep conditions change from year-to-year, as well as seasonally, and will vary in the site closure configuration compared with seep conditions prior to the site being closed.</p> <p>The following text was added to address the subject of seep flows in different drainages:</p> <p>North Walnut Creek – "Intermittent seep flows were historically observed in the location of Functional Channel 1 (near the former site of Building 116), in Functional Channel 2 (by the newly constructed wetlands, west and northwest of the former Building 771 site), and north of the SEP area."</p> <p>South Walnut Creek - "Intermittent seep flows were historically observed in the location of Functional Channel 4 (by the newly constructed wetlands, west and east of the former Building 991 site), in the drainage north of the Mound treatment system, and on the hillslopes south of Ponds B-1, B-2, and B-5."</p> <p>Woman Creek - "Intermittent seep flows were historically observed in several locations north of (uphill from) the South Interceptor Ditch, including west and east of the Original Landfill, south of the Building 881 site, south of the former contractor yard, and a large seep in the 903 Pad Lip Area (southeast of the 903 Pad)."</p> <p>Reference: EG&amp;G 1995. Hydrogeologic Characterization Report for the Rocky Flats Environmental Technology Site. Volume II of the Sitewide Geoscience Characterization Study. Final Report. April 1995.</p>
Aquatic	EPA	General	V15B G28	VOLS 15B1 AND 15B2	The Rock Creek Drainage summary should be revised to include a description of the Lindsey Ranch Ponds and any relevant information on their historical use and potential contamination pathways.	<p>A description of the Lindsay Ranch Ponds, their historical use, and potential contamination pathways will be provided in the text. Text will also be added to note that Rock Creek does not receive runoff from the former IA and contaminant transport pathways from the IA to Rock Creek have not been identified for surface water or groundwater.</p> <p>The following text will be added:</p> <p>"The most significant man-made drainage feature in the Rock Creek drainage is the Lindsay Pond, located near the Lindsay Ranch and also referred to as Lindsay Pond 1 (USFWS 2004). The Lindsay Pond was used for stock watering prior to 1974 (USFWS 2001). Two other small, former stock ponds are located upstream from Lindsay Pond 1. Seeps are common in the Rock Creek watershed, particularly on the north-facing hillslopes, and contribute to a range of wetland types in the watershed (USFWS 2001). The 1994 Wetlands Mapping and Resource Study identified a total of approximately 58 acres of wetlands in Rock Creek and its subdrainages (USACE 1994)."</p> <p>"The Rock Creek watershed does not receive runoff from the IA and therefore was not included in the model boundaries for the Site-Wide Water Balance study. Contaminant transport pathways from the IA to Rock Creek have not been identified for surface water or groundwater."</p> <p>References: U.S. Fish and Wildlife Service, Rocky Flats National Wildlife Refuge Final Comprehensive Conservation Plan and Environmental Impact Statement, September 2004. U.S. Fish and Wildlife Service, Integrated Natural Resources Management Plan, Environmental Assessment, and Finding of No Significant Impacts for the Rock Creek Reserve. May 2001. USACE, 1994, Rocky Flats Plant Wetland Mapping and Resource Study (prepared for U.S. Department of Energy), U.S. Army Corps of Engineers, Omaha District, December.</p>

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Aquatic	EPA	General	V15B G28	VOLS 15B1 AND 15B2	<p>The North Walnut Creek and South Walnut Creek summaries should be revised to include a description of how the A-series and B-series ponds are connected to one another. This description should include information both for within the series ponds (e.g., A-1 flows into A-2, etc.) and between the series ponds (e.g., historically Pond A-2 was connected to Pond B-1 via a pipeline to allow for periodic releases of water during spring run-off events). In addition, please add the approximate volume capacity for each pond.</p>	A description of the water routing between the ponds and the approximate volume of each pond will be added to the text.
Aquatic	EPA	General	V15B G28	VOLS 15B1 AND 15B2	<p>The description of South Walnut Creek should be revised to include a description of Pond A-5 (Flume Pond).</p>	<p>The text will be modified to include a description of the Flume Pond. (It is noted that "Flume Pond" is a preferred name for that pond, versus "Pond A-5", since that pond should not be inferred to be one of the managed A-Series ponds on North Walnut Creek).</p> <p>The following text will be added in the Walnut Creek section:</p> <p>"The Flume Pond (also referred to as Pond A-5) is a flow-through pond found in this reach of Walnut Creek. As previously noted, the flows in Walnut Creek following site closure will be substantially reduced compared to past flows."</p> <p>The physical characteristics of the Flume Pond (approximately [0.5 ac-ft], shoreline length = 378 m, surface area = 0.144 h) will also be provided in this section.</p>
Aquatic	EPA	General	V15B G28	VOLS 15B1 AND 15B2	<p>The text indicates that North Woman Creek is "hydraulically isolated from the IA OU" and "accelerated actions are not expected to alter the watershed or hydrology". However, groundwater from the IA migrates under the SID and is likely to discharge to Woman Creek. Please verify and revise the description as appropriate. In addition, while it is agreed that the Accelerated Action associated with the Original Landfill would not necessarily affect the local hydrology, the design includes a subsurface gravel drain that will direct groundwater discharge to Woman Creek (estimated to be less than 5 gallons/minute). Please verify the statements in the text and revise as necessary.</p>	<p>The text will be modified. North Woman Creek should be referenced as the main stem of Woman Creek. Therefore, the text will be changed to read:</p> <p>"The main stem of Woman Creek flows from the west onto the southwest quadrant of the RFETS property and converges with the Owl Branch at a point approximately 1,800 feet east of the RFETS western boundary. The westernmost reach of Woman Creek, upstream from the confluence with Owl Branch, has both perennial and intermittent flow, depending on the specific portion of the channel, and is hydraulically isolated from the IA OU. Accelerated actions are not expected to alter the watershed or hydrology of this portion of Woman Creek. Further downstream, east of the confluence with Owl Branch, Woman Creek is hydraulically connected with the former IA, in terms of groundwater flowing beneath the SID, and discharge from the Original Landfill gravel drain is estimated to yield less than 1 gallon per minute into Woman Creek."</p> <p>(Note: The text regarding the seep was modified to read "less than 1 gpm" instead of "less than 5 gpm" based on information provided in the Original Landfill IM/IRA).</p>
Aquatic	EPA	General	V15B G28	VOLS 15B1 AND 15B2	<p>The text states, "the Owl Branch of Woman Creek (South Woman Creek)" should be reviewed based on what is shown in Figure 1.6. The description of Owl Branch should be revised as appropriate.</p>	The description of Owl Branch will be clarified to indicate it is separate from South Woman Creek. Owl Branch is the tributary that flows in a northeasterly direction and joins Woman Creek at a location directly south from the location of the former 130 warehouse building.
Aquatic	EPA	General	V15B G28	VOLS 15B1 AND 15B2	<p>The statement that Antelope Springs is influenced by Rocky Flats Lake should be verified. A review of Figure 1.6 indicates that the lake may influence Owl Branch and Smart Ditch, but is not connected to Antelope Springs.</p>	<p>A reference citation will be added to support the statement that Rocky Flats Lake is potentially a source of recharge to the Rocky Flats Alluvium that eventually discharges at Antelope Springs. The revised text will read:</p> <p>"The seep is potentially influenced by subsurface flow from Rocky Flats Lake, located offsite to the west (EG&amp;G 1995)."</p> <p>Reference: EG&amp;G 1995. Hydrogeologic Characterization Report for the Rocky Flats Environmental Technology Site. Volume II of the Sitewide Geoscience Characterization Study. Final Report. April 1995. (p. 60).</p>

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
Aquatic	EPA	General	V15B G28	VOLS 15B1 AND 15B2	The Smart Ditch Drainage summary should be revised to include a description of its confluence or the portion of the ditch that is designated as South Woman Creek (See Figure 1.6).	The description of the Smart Ditch drainage will have text added to clarify the discussion regarding South Woman Creek, as follows: "In the southern portion of the BZ EU, water from Rocky Flats Lake, located southwest of the site, flows through Smart Ditch before it joins the headwaters of South Woman Creek. South Woman Creek continues flowing west until it reaches a splitter box, which can divert water into one of the following two drainages: 1) South Woman Creek flows west before joining Woman Creek approximately 1,000 feet west of the site boundary. 2) Smart Ditch flows southeast, through two ponds (D 1 and D 2, neither of which are operated by DOE), which are located in the southeastern corner of the BZ OU and are used for irrigation." South Woman Creek is designated as stream segment 6 in the Big Dry Creek basin by the Colorado WQCC. Both Smart Ditches are owned and operated by the Church Estate, not DOE or its contractors. Neither South Woman Creek, nor either of the Smart Ditches, receive runoff from the IA OU. South Woman Creek is shown on Figures 1.5 through 1.7.
Aquatic	EPA	General	V15B G29	VOLS 15B1 AND 15B2	V15B G29. Page 7, Section 1.1.4, Aquatic Life: The section does not present a systematic or consistent description of aquatic life for each drainage or water body. Several years of aquatic surveys which describe the habitat and specific aquatic life for each drainage and primary streams are available and more specifically summarized for this section. It is requested that this section be organized to be similar to Section 1.1.3 (i.e., by subheadings for each water body) and present specific and systematic descriptions of aquatic life including invertebrates and vertebrate populations, native and non-native species for each drainage and water body (as available). In addition, please revise the description of aquatic life to indicate whether any threatened or endangered, or other special status species have been identified.	Additional information on the ecology of the AEU is provided in the risk characterization sections. No change will be made to the section on Aquatic Life.
Aquatic	EPA	General	V15B G30	VOLS 15B1 AND 15B2	V15B G30. Page 7-8, Section 1.1.4, Aquatic Life: It is stated that reliable surface flows in the drainages occur only near seeps and springs. However, the specific locations of reliable surface flows (seeps and springs) are not identified in either this section or Section 1.1.3. It is essential to understanding which drainages, or portions of drainages, are perennial or are described as having reliable surface flows. Please clarify this information in Section 1.1.3.	Stream classifications are shown on all figures in the AEU. Classifications are based on site-specific flow monitoring. In large part, the streams and seeps at the site are intermittent or ephemeral. No changes will be made to the figures or the text.
Aquatic	EPA	General	V15B G31	VOLS 15B1 AND 15B2	V15B G31. Page 8, Section 1.1.4, Second Full Paragraph, and Figure 1.8 (Volume 15B1/Page 7, Section 1.1.4, Third Paragraph and Figure 1.7 (Volume 15B2): The paragraph indicates that potential aquatic habitats are shown in Figure 1.7/1.8, and that information of observed aquatic species (fish, amphibians, invertebrates) records was layered into this map which represents all potential habitat areas based on history flow conditions. While the intent to identify aquatic habitats on the site is considered important, the information is not properly defined or displayed. For example, the title of the figure "Potential Aquatic Habitat Types Within RFETS", but does not indicate the types of habitat on the figure. The figure also indicates that the pink highlighted areas are the 'potential habitat areas', but the highlighted areas do not include ponds as being defined as potential habitat. It is recommended that the figure and corresponding text be clarified to include streams, ponds, and other potential habitat. In addition, in order to ensure that amphibians are properly addressed, the figure should be revised to also include an overlay of wetlands, and add a legend that would identify the habitat types as implied by the title of the figure.	The text and figures will be revised to discuss and present the locations of ephemeral and perennial seeps and streams. The text will note that perennial flow areas are potential habitat areas.
Aquatic	EPA	General	V15B G32	VOLS 15B1 AND 15B2	V15B G32. Section 1.1.4, Aquatic Life: The AEU are intended to address amphibians, wading birds and waterfowl. Please add a discussion, based on historical survey data, regarding the populations of amphibians, wading birds and waterfowl for each drainage.	Section 1.1.4 is a summary of previously collected information. No change will be made to the text.
Aquatic	EPA	General	V15B G33	VOLS 15B1 AND 15B2	V15B G33. Figure 1.2: The IHSS locations are not clearly visible on the figure. Please clarify the boundaries of the IHSS within each AEU.	The requested change will be made.



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Aquatic	EPA	General	V15B G34	VOLS 15B1 AND 15B2	V15B G34. Figures: Several figures (e.g., Volume 15B2, Figure 1.9) include the statement, "Background locations shown in red", but no locations are shown in red. To avoid confusion, it is recommended that the statement be removed from figures that do not have background locations present.	The requested change will be made.
Aquatic	EPA	General	V15B G35	VOLS 15B1 AND 15B2	V15B G35. Table 2.1: The MDC comparison to background is presented and used in the comparison for selecting ECOPCs. However, the background values used for comparisons are not presented. Please provide a footnote for the ">bkg" column with a specific reference to Volume 2, Attachment 5.	The background comparison is statistical and not based on the MDC. A footnote will be added to Table 2.1 to clarify the background comparison.
Aquatic	EPA	General	V15B G36	VOLS 15B1 AND 15B2	V15B G36. Table 2.3: Please revise the table to include the media and units of measure. The title of the table should also be revised to indicate that the samples being presented are from sediment (e.g., Total Maximum Detected PCB Values in Sediment for the NW AEU).	The requested change will be made.
Aquatic	EPA	General	V15B G37	VOLS 15B1 AND 15B2	V15B G37. Tables: The pre-draft version of the document included tables which presented total PAH values. It is not clear why similar tables which present total PAHs are not included in the document.	A tabulation of total PAH concentrations is provided in Attachment 6.
Aquatic	EPA	General	V15B G38	VOLS 15B1 AND 15B2	V15B G38. ATTACHMENT 2 – Data Quality Assessment: The DQA should be reviewed and revised to address the comments as presented for Volume 2, Attachment 2.	See responses to the referenced comments.
Aquatic	EPA	General	V15B G39	VOLS 15B1 AND 15B2	V15B G39. ATTACHMENT 5 – Alternative Toxicity Values and Site-Specific ESLs: It is indicated that the Level 1 biota concentration guideline used to calculate the original ESL was based on "radiosensitive aquatic and riparian receptors". The document should be revised to clarify whether the sensitive receptors that the original ESL is based upon may be present in any of the AEUs. In addition, the discussions in the risk characterization sections (Section 5.1) should clarify that the 'AT' for this chemical is similar to the ESL in that it reflects a no effect level.	More detail will be provided in Attachment 5 related to chronic ESLs and acute criteria for radionuclides.
Aquatic	EPA	General	V15B G40	VOLS 15B1 AND 15B2	V15B G40. Attachment 8 – Pond-Specific Evaluation: It appears that this attachment is a copy or very similar to the former NE-1 report for the A-, B-, and C-series ponds. The text still includes statements regarding the need for Accelerated Action and includes references to sections and attachments that no longer exist. It is also not clear whether the data used for the assessment in this attachment is the same as the data used in the CRA. While it is appropriate to include a detailed review of ponds in the AEUs, the approach as presented is difficult to follow. It should be noted that the NE-1 report was prepared based on the Accelerated Action process therefore, only sediment was evaluated and ecological risk only addressed benthic invertebrate exposures via direct contact with bulk sediment. The pond-specific evaluation of exposures to sediment, and not surface water, does not address the complete exposure pathways that may occur in the ponds. Since the ecological component of the NE-1 report was deferred to the CRA, the attachment should be revised to summarize the relevant conclusions from the NE-1 report (rather than simply re-present the entire report). The pond-specific evaluation should be revised to include a quantitative evaluation of aquatic receptors exposures via surface water and semi-aquatic wildlife exposures via ingestion.	Based on meetings and discussions with EPA and CDPHE, it was agreed to integrate the pond specific risk assessments into the main body of the CRA. This will be done. Attachment 8, Pond Specific Evaluation Findings, will be deleted from the CRA
Aquatic	EPA	General	V15B G40	VOLS 15B1 AND 15B2	V15B G40. Attachment 8 – Pond-Specific Evaluation: It appears that this attachment is a copy or very similar to the former NE-1 report for the A-, B-, and C-series ponds. The text still includes statements regarding the need for Accelerated Action and includes references to sections and attachments that no longer exist. It is also not clear whether the data used for the assessment in this attachment is the same as the data used in the CRA. While it is appropriate to include a detailed review of ponds in the AEUs, the approach as presented is difficult to follow. It should be noted that the NE-1 report was prepared based on the Accelerated Action process therefore, only sediment was evaluated and ecological risk only addressed benthic invertebrate exposures via direct contact with bulk sediment. The pond-specific evaluation of exposures to sediment, and not surface water, does not address the complete exposure pathways that may occur in the ponds. Since the ecological component of the NE-1 report was deferred to the CRA, the attachment should be revised to summarize the relevant conclusions from the NE-1 report (rather than simply re-present the entire report). The pond-specific evaluation	See response above.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
					should be revised to include a quantitative evaluation of aquatic receptors exposures via surface water and semi-aquatic wildlife exposures via ingestion.	
NW AEU; SWAEU; and WC AEU	CDPHE	Specific		15B2	Please modify the document in accordance with the specific comments provided for Volume 15 B.1.	Please see responses to comments on Volume 15B1.
NW AEU, SW AEU, WC AEU	EPA	Specific		VOL 15B2	COMMENTS SPECIFIC TO 15B.2 – NW AEU, SW AEU, WC AEU	No response necessary.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S5.	VOL 15B2	V15B S5. Page 5, Section 1.1.3, South Interceptor Ditch (SID): The description does not provide enough information regarding the current hydrology or the potential for water flow in the SID. Please provide additional description for the current configuration and expected hydrology of the SID. Please revise the text to indicate the current length of the SID (following elimination of the 1500 feet associated with the Original Landfill remedy) and add additional information regarding whether water is expected to be present or flow in the SID based on the current site configuration.	The description of the SID will be expanded to read as follows:  "Runoff from the southern portion of the IA flows into the SID, which was constructed to prevent runoff into Woman Creek. The SID is a grass-lined, trapezoidal channel with ephemeral flow that is routed into Pond C-2. Removal of impervious surfaces (buildings and pavement) from the IA will further reduce the historic discharge volumes and peak flow rates. In addition, the western 1,500 feet of the SID were eliminated by the cover for the Original Landfill (IHSS 115). The resulting length of the current SID is approximately 6,000 feet."
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S5.	VOL 15B2	North Walnut Creek AEU – NOTE: Specific Comments for this AEU also pertain and should be address for the similar sections and statements present for other AEU's	Issues identified for NW AEU will be addressed in other AEU's, as appropriate.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S6.	VOL 15B2	V15B S6. Page 16, Section 2.3.1, ECOPCs for NW AEU, Surface Water: Ten ECOIs are eliminated since they have less than a 5% frequency of detection. However, Attachment 1, Table A.1.2NWAEU.1, indicates that the detection limits for all 10 chemicals were not always adequate. Therefore the conclusion that risks from these ECOIs are unlikely is not necessarily supported. The text should be revised to indicate that the detection limits are not adequate to derive meaningful risk conclusions for these infrequently detected chemicals. It is recommended that the potential range of the frequency of detection based on the reporting limits be presented (as indicated in General Comments). Depending on the ranges reported, it may be appropriate to retain an ECOI and evaluate other lines of evidence as part of a professional judgment proves (e.g., co-located sediment results, whether the ECOI is/or is not an chemical associated with an IHSS in the AEU, comparisons to acute levels).	The uncertainty in the risk assessment process with respect to detection limits exceeding the ESLs will be discussed in the text. Further discussion of this uncertainty will be provided in Section 6.1.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S7.	VOL 15B2	V15B S7. Page 17, Section 2.3.1, ECOPCs for NW AEU, Surface Water: Fluoride is not selected as an ECOPC since the AEU UTL is less than the ESL. However, as noted on Figure 2.15, all of the ESL exceedances are at the outfall of 3 of the 4 ponds in the AEU. As indicated in the General Comments, it is not clear whether the calculation of the UTL, which includes a disproportional number of samples from the upland locations in the IA and from within the main channel, represents the upper bound exposure concentration for the ponds. Please clarify that the approach is representative of upper bound exposures.	The uncertainty in the risk assessment process with respect to the limitations of spatial representativeness of the fluoride data will be discussed.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S8.	VOL 15B2	V15B S8. Page 19, Sediment, Second Paragraph under bullets: It is stated, "no ECOIs were eliminated as a result of the statistical background comparisons." However, Table 2.2 indicates that a background comparison was not performed for several of the inorganic ECOIs for which background values are available (e.g., arsenic, chromium). Please clarify that text and table to indicate that both the ECOIs were above background, or clarify why the approach was not used for these ECOIs.	Table 2.2 will be corrected. Both the arsenic and chromium concentrations are greater than background and these ECOIs are retained as ECOPCs.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S9.	VOL 15B2	V15B S9. Page 20, Arsenic: The text states that arsenic with concentrations above the ESL are dispersed in aquatic habitat areas. However, all sediment locations with concentrations above ESLs are actually located within ponds, and do not appear to be distributed across all aquatic habitat areas (Figure 2.41). It is agreed arsenic does not need to be identified as an ECOPC in sediment for the NW AEU. However, please revise the text to indicate that although the exceedances occur within two ponds, in both cases there are multiple samples within the same ponds are all below the ESL, and the magnitude of the exceedances based on the MDL (12 mg/kg) and the AEU UTL (8.8 mg/kg) suggests that the isolated exposures at and above the ESL (9.79 mg/kg) are expected to be minimal.	The text will be clarified as requested.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S10.	VOL 15B2	V15B S10. Page 20, Bis(2-ethylhexyl)phthalate: The MDC (47,000 ppb), which is approximately twice the ESL, occurs in Pond A-2 (Figure 2.43). Although the UTL for the drainage indicates concentrations below which would affect the entire drainage, it is not clear whether the UTL represents this isolated habitat or whether concentrations within the pond would be an isolated problem. It is recommended that the ECOI be retained for further review (e.g., review acute toxicity literature and calculate a pond-specific UTL). Alternately, please indicate whether the ECOI for this pond could be related to laboratory blank contamination.	The samples that exceed the ESL are surrounded by samples that are below the ESL. Bis(2-ethylhexyl)phthalate will be discussed in the same terms agreed to for arsenic in the previous comment and will not be carried forward as an ECOPC.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S11.	VOL 15B2	V15B S11. Page 33-34, Section 5.1, Contaminant Lines of Evidence: For reasons indicated in the General Comments, the approach to use an ESL frequency of exceedance of 20 percent is not appropriate for aquatic populations. In addition, please remove the discussion related to EPA regulatory practices as it has oversimplified or mischaracterized the EPA regulatory approach for establishing National Ambient Water Quality Criteria. Please revise the document to present the lines of evidence based on the number of exceedances to the acute and chronic aquatic criteria.	The text will be revised to clarify the discussion. The use of the 20% exceedance criteria will be removed from the risk characterization and the number of exceedances of chronic/acute WQCs will be included as discussed in the general comments.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S12.	VOL 15B2	V15B S12. Page 36, Section 5.3.1, Site-Specific Habitat Description: The habitat description does not provide enough information as to the type of habitats that are available in the AEU. For example, it is not clear whether the ponds will offer a lentic habitat, or whether some or all may be more representative of wetlands. The description should be expanded to include the approximate size and nature of the main channel and ponds within the AEU. Please describe the available habitat for aquatic and semi-aquatic species (e.g., sediment type in channel/ponds, riparian, wetlands) and include historical survey information on other receptor groups (e.g., waterfowl and amphibian use). In addition, it is indicated that North Walnut Creek has a series of retention ponds and that Pond A-1 is isolated from North Walnut Creek and does not receive runoff from the IA. Please clarify the setting and describe that the 'retention ponds' were part of the series of ponds associated with the former Wastewater Treatment Plant. Please also indicate whether any of the A-series ponds are currently connected to the B-series ponds via piping. The source of the aquatic population data in the second and third paragraph should be cited (e.g., Aquatics Associates Inc, 2002).	The information in Section 5.3.1 (now Section 5.1.2) will be expanded to provide the details of the historical ecological studies that describe the ecosystem of the NW AEU and potential impacts from former RFETS operations.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S13.	VOL 15B2	V15B S13. Page 37, Section 5.1.2, Surface Water ECOPCs, Aluminum (total), 2nd paragraph: This paragraph provides the rationale for which toxicity benchmark to select when evaluating aqueous exposures from aluminum. This text should be moved into the Toxicity Assessment (Section 4.0).	The rationale will be moved to Table 4.1.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S614.	VOL 15B2	V15B S14. Page 38, Section 5.3.2, NW AEU Surface Water, Aluminum: The text states that "both the MDC and UCL values in the post-1999 data were less than for the entire data distribution". However, inspection of Table 5.1 and Table 5.2 shows that the UCL increased from 20 mg/L to 23.4 mg/L. This statement should be revised accordingly. In addition, rather than simply comparing summary statistics and point estimate HQs between the post-1991 and post-1999 datasets, the text should be revised to present a summary of the frequency and magnitude of exceedances based on the post-1999 dataset and include a discussion of any temporal trends which is supported by temporal plots of surface water concentrations. It is recommended that the example Figure 3 (attached to these comments) be used to support the summary. This comment applies to all AEUs and all surface water ECOPCs in which the post-1999 line of evidence was utilized.	Temporal trend figures will be included and the discussion will be revised as appropriate.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S15.	VOL 15B2	V15B S15. Page 41, NW AEU, Cyanide, 2nd full paragraph: Two statements in this paragraph conflict with each other. The second sentence states that ESL exceedances occurred within the channel and in the ponds (which is supported by the spatial map). The last sentence states that "within the NW AEU stream and associated ponds there are no concentration of elevated cyanide that would drive the potential for risk to aquatic populations". The last sentence should be removed.	The paragraph will be revised to focus on the locations where cyanide exceeds chronic and acute ESLs.



EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S16.	VOL 15B2	V15B S16. Page 45, Aroclor-1254, last paragraph: Two statements in this paragraph conflict with each other. The first sentence states that the aroclor was detected in just 5 percent of the samples. The last sentence on the page states that the detection limit for aroclor-1254 exceeded the screening ESL with HQs > 10 in all cases. Table 5.5 indicates that 113 of the 119 surface water samples were non-detects with a detection limit with a HQ range greater than 10 (i.e., the HQ for 113 samples would be > 10 if aroclor was detected at this detection limit). Thus, the interpretation of the frequency of detection being only 5 percent as stated is misleading. To present a more balanced review, please revise the description to include a discussion of the limitations of the data by presenting the range of potential HQs using the detection limit (as indicated in the General Comments).	The last and second to last paragraph will be revised to acknowledge the uncertainties with respect to detection limits and present a more balanced discussion.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S17.	VOL 15B2	V15B S17. Page 46, NW AEU, Radium-228: The last sentence indicates that the risk from radium-228 is low. However, the previous discussions indicate that due to the fact that there are only 3 surface water samples with which to evaluate risks, none of which are current (i.e., post 1999), and that the 'AT' HQ exceeds one. Please revise the statement to indicate that the risks based on radium-228 are unknown and it is recommended that the chemical be retained for further analysis.	The uncertainty analysis will be used to discuss the data limitations for Radium-228. The data limitation will be noted in Table 5.7.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S18.	VOL 15B2	V15B S18. Page 47, NW AEU Sediment, Aluminum: Rather than simply comparing summary statistics and point estimate HQs (i.e., MDC, UTL, UCL) between the entire sediment dataset (all depths) and the surficial sediment dataset, the text should be revised to present a summary of the frequency and magnitude of exceedances based on the surficial dataset (i.e., similar to Table 5.5). This comment applies to all AEU's and all sediment ECOPCs in which the surficial sediment line of evidence was utilized.	The additional tables will be prepared and included in the risk characterization.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S19.	VOL 15B2	V15B S19. Page 55, NW AEU, Sediment, Fluoride: It is concluded that there is low to uncertain potential for adverse effects to aquatic life for this chemical. However, one line of evidence supporting this statement is not appropriate. It is indicated that, as shown in Attachment 8, this chemical is not identified as an ECOPC for the pond-specific evaluations of Ponds A-1 through Pond A-5. However, Figure 2.49 indicates that no sediment samples were collected from any ponds or from the downstream portions of the channel. It is also indicated that fluoride was eliminated from the surface water ECOPC process since the UTL is less than the ESL. As illustrated on Figure 2.15, the only locations that surface water ESLs were exceeded is at the outfalls for Ponds A-1, A-2 and A-4. Thus, it appears that there may be a data gap related evaluation of risks from fluoride in the ponds (since all sediment sample locations are located either upgradient and or outside of the aquatic habitat). It appears that the conclusion for this chemical is uncertain. It is recommended that fluoride in sediment be designated as "retained" for further evaluation.	The uncertainty analysis will be used to discuss the data limitations for fluoride. The data limitation will be noted in Table 5.7.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S20.	VOL 15B2	V15B S20. Page 63, NW AEU, Sediment, Selenium, third full paragraph: The text indicates that selenium was identified as an ECOPC for surface water. However, Table 2.1 indicates that it is not an ECOPC and selenium does not appear on the other tables that are referenced in this paragraph. The 95 percent UTL for selenium is equal to the ESL and selenium is identified as an ECOPC in the pond-specific evaluation. It is recommended that it be retained as an ECOPC for surface water.	Selenium is an ECOPC for surface water and Table 2.1 will be revised accordingly.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S21.	VOL 15B2	V15B S21. Page 138, Section 6.2, Uncertainties Associated with ECOPC Identification Process: The approach for surface water includes the use of all data from 1991 to the present. Depending on the available data, the calculation of the UTL based on this data set may not represent the current conditions at the site. Please add this as an uncertainty in the selection of ECOPCs for surface water.	Although we acknowledge that this is an uncertainty, the CRA was conducted following the CRA Methodology. No change will be made to the text.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S22.	VOL 15B2	V15B S22. Table 1.1: The title of the table indicates, "AEU IHSSs", but does not designate which IHSSs occur in each AEU. Please revise the table to indicate which IHSSs occur in each AEU.	The requested change will be made.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S23.	VOL 15B2	V15B S23. Table 2.1: Table 2.1 presents a selection of ECOPCs for surface water. It is not clear why the "> bkg" column (background comparison) does not evaluate all ECOIs for which there are available background concentrations (as presented in Volume 2, Attachment 5). Please clarify the tables or indicate why the background approach was not used for certain analytes.	An explanatory footnote will be added to Table 2.1 with respect to the background comparisons. The statistical background comparisons are not performed if there are less than 20% detections in either the AEU or background data sets.

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NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S24.	VOL 15B2	V15B S24. Table 2.2: The table incorrectly indicates that the MDC for Aroclor 1260 is less than the ESL. Please change the designation to 'yes' for this chemical.	The table will be corrected.
NW AEU, SW AEU, WC AEU	EPA	Specific	V15B S25.	VOL 15B2	V15B S25. Figures: It is not clear why surface water data distribution figures have not been presented for nickel and selenium. It is recommended that the figures be included in the report.	Data distribution figures will be replaced with figures that show both the data distribution and temporal trends. Selenium is an ECOPC for surface water, and the data distribution figure will be included in the revised CRA. Nickel is not an ECOPC for surface water.
NW AEU, SW AEU, WC AEU	EPA	General		VOL 15B2	Chemical Risk Estimation for the all AEU: Except as noted in the following comments, there is general agreement in the risk estimates as presented for the ECOPCs in all AEU. However, the level of confidence or the uncertainty component of the risk characterization is not reported for many chemicals. Please add the level of certainty associated with the risk level that is reported for each ECOPC in all AEU. Please note that a major component of the uncertainty level should consider and be partially based on whether the detection or reporting limits were greater than the ESL or other criteria.	Uncertainties in the risk assessment are noted for ECOPCs where there are spatial representativeness or detection limit issues.
NW AEU, SW AEU, WC AEU	EPA	Specific	1	VOL 15B2	<b>Page 2, first complete paragraph:</b> The paragraph indicates that detailed description of the OU and IHSS history is included in other referenced sections of the report. However, the other sections that are cited do not include information related to the relevance of the IHSS for the specific AEU. The types of wastes and whether IHSSs (or other sources) were cleaned up as part of the Accelerated Actions is relevant to understanding risks and potentially impact risk management decisions. Please revise Table 1.1 to indicate which IHSSs are in each of the AEU. At a minimum, the Risk Characterization should include a brief discussion to give a general indication of chemical groups that are known to have been associated with the IHSSs in the AEU. Section 5.1.1, third paragraph, indicates that many of the ECOPCs are naturally occurring. It is recommended that a paragraph which describes the anthropogenic compounds that could have been released based on the IHSSs in the AEU be added to this section.	Table 1.1 will be revised to indicate which IHSSs are in each AEU.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	Specific	2	VOL 15B2	Page 4, top of page: Please cite Figure 1.6.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	Specific	3	VOL 15B2	Section 1.1.3, Pages 4 through 10: The surface water hydrology definition is not always provided in the descriptions for each of the tributaries. Please indicate whether the tributary is ephemeral, intermittent, or perennial based on the definitions provided in footnotes on pages 3 and 4.	Text was added to describe whether each drainage is ephemeral, intermittent, or perennial based on the definitions for those terms provided in footnotes on pages 3 and 4.
NW AEU, SW AEU, WC AEU	EPA	Specific	4	VOL 15B2	Page 4, No Name Gulch: It is not clear that the gulch is "ephemeral", which is defined as having a bed above water table year round and for which groundwater is not a source of water for the stream (based on the definition provided on Page 3). Past versions of this document indicate that there are groundwater seeps into the drainage, which would be considered intermittent based on the definition provided on Page 3. Please verify whether the stream is ephemeral or intermittent (i.e., identify whether there are groundwater seeps within the drainage). This comment also applies to the description provided for South Walnut Creek and Woman Creek, which also appear to fit the description of intermittent rather than ephemeral (see Page 6, second paragraph and Page 8, third paragraph which describe "ephemeral seep flows").	The text will be changed so that No Name Gulch is identified as having "intermittent" flow, based on flow measurements and historical observations and mapping of seeps in the drainage.  The descriptions of seep flows in Walnut and Woman Creek will also be changed to "intermittent" from "ephemeral."
NW AEU, SW AEU, WC AEU	EPA	Specific	5	VOL 15B2	Page 4, last paragraph: The terms Functional Channels and "SEP" have not been previously introduced and the locations of the Functional Channels, the newly constructed wetlands, and the specific buildings discussed in this paragraph are not found on any figure. Also, please change "wet" to "west". Please describe Functional Channel and SEP, and add the features to a figure or provide a landmark currently shown on a figure to describe the locations of these features. SEP is not included in the acronym list. This similar issue occurs on Page 6, second paragraph.	With respect to text that addresses North Walnut Creek, the text will be changed to introduce the terms "Functional Channel" and "SEP" and to include those terms on the acronym list. Instead of using "newly constructed wetlands" and former buildings as location references, the locations of the channels will be referenced using features on the figures. Also, "wet" will be changed to "west."



EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	Specific	6	VOL 15B2	Page 5, first paragraph: STP is not defined and is not included in the acronym list.	STP will be defined in the text the first time it appears ("Sewage Treatment Plant") and will be included on the acronym list.
NW AEU, SW AEU, WC AEU	EPA	Specific	7	VOL 15B2	Page 5, Pond A-4: Please verify the current conditions and remove the placeholder.	The text is correct as it currently exists (98.6 acre-feet for Pond A-4). The placeholder to check that value will be removed.
NW AEU, SW AEU, WC AEU	EPA	Specific	8	VOL 15B2	Page 5, second to last paragraph: It is stated, "Current conditions do not indicate that operational differences are any different than those cited above". However, the operational conditions described above include discharges from the STP, volume controls through spray evaporation, and overflow transfers from the B-series ponds to the A-series ponds. Please verify the statement and correct as needed. The same statement occurs as related to the operation of the B-Series ponds in South Walnut Creek (see Page 7).	The statement will be deleted that reads: "Current conditions do not indicate that operational differences are any different than those cited above." The text describing the operations and flow routing of the ponds will corrected for both North Walnut Creek and South Walnut Creek.
NW AEU, SW AEU, WC AEU	EPA	Specific	9	VOL 15B2	Page 7, Woman Creek Drainage, second paragraph: There appears to be confusion regarding the description in the text related to South Woman Creek tributary and the Owl Branch. The text refers to the Owl Branch as "(South Woman Creek)". However, Figures 1.5 through 1.7 identify an apparently unrelated stream segment, which is in a different drainage system and downstream of Smart Ditch, as South Woman Creek. It appears that the figures are correct, but the text incorrectly refers to the southernmost branch segment adjacent to North Woman Creek, which is currently labeled as Owl Branch, as South Woman Creek. Please verify the text and figures to assure an accurate description of the creek. The same issue occurs in the description for North Woman Creek and Woman Creek (see Page 8).	<p>The text will be corrected. Owl Branch is a tributary to Woman Creek that flows from west of the western site boundary, and flows in a northeasterly direction before joining Woman Creek. Owl Branch is not the same as South Woman Creek, as was originally stated in the text. The text will be corrected to delete the parenthetical "South Woman Creek" in the discussion about Owl Branch." As noted in the comment, South Woman Creek is connected to the Smart Ditch.</p> <p>The text was also corrected to delete the reference to North Woman Creek. That channel reach is simply called Woman Creek (western reach).</p>

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	Specific	10	VOL 15B2	<b>Page 8, North Woman Creek:</b> The last sentence states, "...and, as noted, discharge from the Original Landfill gravel drain...". The gravel drain and the Original Landfill have not been previously mentioned, so it is not clear what the "as noted" is referring to. The OLF gravel drain that discharges to Woman Creek is an important feature and should be cited on a figure.	The "as noted" will be deleted from the sentence and the Original Landfill gravel drain outfall will be added to Figure 1.6
NW AEU, SW AEU, WC AEU	EPA	Specific	11	VOL 15B2	<b>Page 10, Rock Creek:</b> It is indicated that Rock Creek is ephemeral. However, subsequent statements indicate that the creek is fed by seeps. Please verify whether the stream is classified as ephemeral or intermittent based on the definitions provided on Page 3.	The text will be changed to read, "Flow in Rock Creek is intermittent."
NW AEU, SW AEU, WC AEU	EPA	Specific	12	VOL 15B2	<b>Section 1.1.4, Aquatic Life:</b> Please add information to describe the USFWS re-introduction program in Lindsey Pond (e.g., red-nosed dace).	The USFWS re-introduction program in Lindsey Pond will be described in the text if the information is readily available.
NW AEU, SW AEU, WC AEU	EPA	Specific	13	VOL 15B2	<b>Page 13, Section 1.1.6, Data Description:</b> Please verify that the correct figures are cited (should be citing Figures 1.8 through 1.10 instead of 1.9 through 1.12?).	The text will be revised to cite the correct figures as identified in the comment.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	Specific	14	VOL 15B2	<b>Page 14, top of page:</b> It is indicated that all surface water samples are 'grab' samples. Please clarify whether there were any continuous samplers on site, and if so, were data from these samplers utilized in the CRA.	Both types of surface water samples will be noted in the revised text.
NW AEU, SW AEU, WC AEU	EPA	Specific	15	VOL 15B2	<b>Page 14, Section 1.1.6, Data Description:</b> The description does not adequately describe the surface water data set. Please add a discussion of filtered versus non-filtered, one time grabs versus locations that were repeatedly sampled. In addition, please reference Section 2.1 for additional details on data description for the AEU.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	Specific	16	VOL 15B2	<b>Page 16, Section 2.1, Data Used in Ecological Risk Assessment:</b> It is not obvious to an outside reader as to why there are two sections describing the data used for the ecological risk assessment (See Data Description in Section 1.1.6). Both sections are presenting data used in the ecological risk assessment, but the current presentation appears to suggest that the data described in this section are the data used in the Ecological Risk Assessment (versus data in Section 1.1.6). It is recognized that this section is describing the chemical-specific adjustments that are required when comparing to ESLs for certain metals or the approach for treating certain chemical groups, however, it is not understood why the information is not consolidated and presented in Section 1.1.6. It is recommended that the data descriptions be presented in one section of the document.	The current organization of the data description is sufficiently clear to not warrant revision. No change will be made to the text.
NW AEU, SW AEU, WC AEU	EPA	Specific	17	VOL 15B2	<b>Page 16, Section 2.1, Data Used in Ecological Risk Assessment:</b> The approach presented regarding the use of the overall and subsets of data should be clarified to allow for an understanding of the screening process used to select ECOPCs. Please clarify that the sediment at any depth was used as a conservative means to select ECOPCs from any depth, while the use of sediment data from 0-6" is used to evaluate the most significant exposure zone for most aquatic receptors. In addition, please clarify that the rationale for using surface water data sets for the periods mentioned (i.e., from 1991 to present and from 1999 to present).	The text will be revised as suggested.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	Specific	18	VOL 15B2	<b>Page 18, Section 2.1, last paragraph:</b> The discussion does not clearly present the rationale or approach for excluding some of the original background samples. First, please clarify that the approach was intended to be conservative by including all data from the original background locations for ECOPC selection, and then to exclude those locations that were downstream and within the AEU. Second, the discussion should be revised to indicate that background locations that are upstream and represent locations that are not likely to have been impacted by known operations and sources at the site are still considered in the background dataset, while those locations that were downstream were removed and included in the onsite dataset for statistical comparisons.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	Specific	19	VOL 15B2	<b>Page 18, Section 2.2, Identification of Surface Water and Sediment ECOPCs, first paragraph:</b> The text indicates that the approach was conducted in accordance with the CRA Methodology, however, the Methodology indicates that essential nutrients would not be evaluated in the ECOPC selection process. Please clarify that this approach was not according to the Methodology and indicate why it was determined to include the essential nutrient screen. It should be indicated that while it does not follow the Methodology, the approach is more inclusive/conservative.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	Specific	20	VOL 15B2	<b>Page 19, Section 2.2, second paragraph:</b> It is stated that the EPC is compared to the ESL that is representative of a no observable effects concentrations. However, surface water ESLs are the equivalent to the chronic effects levels. Replace: "This EPC is compared to the CRA Methodology ESL that is representative of a no observable effects concentration (NOEC) or threshold effects concentration.", with: "This EPC is compared the CRA Methodology ESL, which representative of a chronic water quality criteria for surface water and a no observable effects concentration (NOEC) ESL for sediment."	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	Specific	21	VOL 15B2	<b>21. Page 19, Section 2.3, Summary of ECOPCs for AEU:</b> The text indicates that the summary of ECOPCs is presented on Tables 2.1 through 2.11. Tables 2.5 through 2.11 were not included in the submittal and were therefore not reviewed at this time. Please present the tables for review.	The tables will be provided as requested.



EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	22	VOL 15B2	Page 20, Section 2.3.1, ECOPCs for the NW AEU, Surface Water: The approach and list of ECOIs detected in less than 5 percent frequency is not optimal and may be misleading. Although it is reported that these ECOIs were detected in less than 5 percent of the samples, it is not clearly stated that if the reporting limits had been lower, these ECOIs may have been detected with much greater frequency. While the text notes that there is uncertainty associated due to higher reporting limits, please also indicate that these ECOIs may have been detected with a greater frequency if the reporting limits had been below the ESLs.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	23	VOL 15B2	Page 21, Section 2.3.1, ECOPCs for the NW AEU, Surface Water: It is stated that spatial distributions of ECOIs were plotted to evaluate whether the concentrations are greater than their respective ESLs. This evaluation is potentially misleading if the detection limits are not below the ESLs. Please clarify the evaluation to discuss whether the detection limit is below the ESL prior to removing the chemicals based on spatial distribution within habitat.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU		VOL 15B2	In addition, it is not agreed that this initial screening (i.e., comparison of detected concentrations to the ESL) should also include an assessment of the quality of the habitat. For example, the discussion for chromium and nickel indicates that the spatial distribution is limited and generally outside of "high quality aquatic habitat". The initial screening process should be used to identify whether there is an exceedance within any aquatic habitat and its inclusion as an ECOPC should not be based on the quality of the habitat.	It is agreed that the quality of the aquatic habitat is not a criterion in the initial screening process. The text will be revised accordingly.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	24	VOL 15B2	Page 28, Section 5.0, AEU-Specific Risk Characterization, third paragraph: It is stated that areas that represent potential source areas for the potential discharge of contaminants in ground water to surface water (i.e., seeps). However, this evaluation is not found in subsequent sections of the report. Please clarify how this evaluation is conducted.	The text will be revised to note that seep data is included in the surface water data set, and therefore, impacts to aquatic receptors from groundwater discharge are evaluated.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	25	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, (Based on revised text provided 6-24-06, no page numbers): The text presents summary statistics for many chemicals indicating the percent of samples that are greater than the criteria. Please revise the text to clearly state that the statistics are related to detected concentrations (e.g., a total of 7 percent of detected samples exceeded the chronic AWQC...). Revisions needed for antimony, cadmium, selenium, silver, and 2-methylnaphthalene. This comment also applies to the other AEU's.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	26	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Ammonia (Based on revised text provided 6-24-06, no page numbers): The historical data associated with ammonia indicated exceedances of the acute criterion and no data have been collected since 1997. The latest sampling event, 1997, does not suggest a downward trend as stated in the text since the detected concentration is similar to results reported for 1994 and 1995, which show some detections that are greater than both the acute and the chronic criteria. Since data are not available for post 1997, it is not known whether or to what magnitude the concentrations would be above or below the chronic and or acute levels. It is recommended that the ECOPC be considered of low to moderate risk and moderate to high uncertainty.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	27	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Antimony (Based on revised text provided 6-24-06, no page numbers): It is stated that although a portion of the proxy values were greater than both the NOEC and LOEC, the level of uncertainty does not impede risk management decisions. However, approximately 30 percent of the non-detected concentrations are greater than the LOEC for surface water. In addition, it is reported that only 1 sample exceeds the NOEC and LOEC for sediment, however, 19 of the 22 non-detects exceed the NOEC and/or LOEC. The level of uncertainty is greater than stated in the text. It is recommended that the ECOPC be considered to have the potential for low to moderate risks and high uncertainty.	It is noted that 19 of 22 non-detects exceeded the NOEC and/or LOEC. Actually, 19 of 56 surface sediment and 27 of 83 subsurface sediment samples are non-detected with proxy values greater than the NOEC and LOEC. The comment indicates that the uncertainty is understated and that risk potential should be considered low to moderate with high uncertainty. While it is agreed that risks cannot be ruled out due to the elevated detection limits, classifying the uncertainty as 'high' when 70% of surface sediment non-detects had proxy values less than the LOEC and 73% of all sediment non-detects had proxy values less than the LOEC is overly-conservative. One surface sediment sample exceeded the both the NOEC and LOEC. No other surface sediment samples exceeded either value. 70% of non-detected samples were of adequate quality with which to define risk. Based on these observations, the text will be revised to classify antimony risk for the NW AEU sediments as low with moderate uncertainty.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	28	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Barium (Based on revised text provided 6-24-06, no page numbers): The first paragraph indicates that the LOEC was exceeded in only 2 samples, while the third paragraph indicates there was only one sample in Pond A-1. Please clarify or correct the text as the statements are inconsistent.	The text will be corrected.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	29	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Cadmium (Based on revised text provided 6-24-06, no page numbers): Thirty-eight percent of the non-detected concentrations exceed the chronic criteria. Please revise the text to indicate that a total of 5 percent of the detected samples exceeded the chronic AWQC. In addition, first paragraph, last sentence, indicates that "the AWQCs for background were appreciable higher due to the higher average water hardness in the background dataset." Since AWQCs are specific to the water body being evaluated, the point or context of the statement is not clear. Please clarify the intention of the statement or remove this statement. The fourth paragraph (beginning with "Spatial evaluations of surface water...") states that the LOEC was exceeded in Pond A-4, however, it is exceeded in Pond A-1. Please correct the error. It is agreed that risks are likely to be low based on the available data, however, the text should indicate that there is low to moderate level of uncertainty associated with the risk estimate.	It is suggested there is agreement on the level of risk for cadmium but uncertainties should be classified as low to moderate. For sediment, 3 of 61 non-detected samples had proxy values greater than the NOEC only. All were less than the LOEC. In surface water, all of the 147 non-detected samples collected since 1999 have proxy values less than the chronic AWQC. While a relatively high percentage of samples from the early to mid 90's had elevated detection limits, current samples are adequate for use in determining chronic risks. As a result, the text will be revised to identify the uncertainty as low.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	30	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Fluoride, (Based on revised text provided 6-24-06, no page numbers): Fluoride is removed as an ECOPC in surface water since the 95% UTL concentration was less than the chronic ESL. However, there appears to be a spatial trend which indicate detections above the ESL only occur in Ponds A-1, A-2, and A-4. It is not clear whether the sample locations within the ponds were one time samples or if they were sampled repeatedly. Please provide additional detail related to the sampling frequency and temporal aspects of the available data for fluoride for the pond locations to ensure that it is not an ECOPC for surface water in the ponds.	It is requested that further information regarding the removal of fluoride as an ECOPC in surface waters be provided. This information is provided in Section 2, the ECOPC identification section, and is not appropriate for Section 5. Section 2 will be revised to reflect the concerns expressed in this comment.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	31	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Iron (Based on revised text provided 6-24-06, no page numbers), fourth paragraph: Change, "Pond A-2" to "Pond A-1".	Pond A-2 will be changed to Pond A-1.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	32	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Vanadium, (Based on revised text provided 6-24-06, no page numbers): First paragraph, last sentence: change "ESL" to "AWQC" and insert "AWQC" following the word "acute". Second paragraph: change "cadmium" to "vanadium". Although the figures suggest that the acute AWQC exceedances are in 'non aquatic habitat', some locations are immediately adjacent to Pond A-1 and may be discharging into the habitat. While the locations in the pond are reported as non-detect, it is not clear whether the detection limits are low enough to conclude the concentrations are below the AWQCs. Please verify and add a statement regarding the adequacy of the detection limits. Depending on the detection limits, it may be advised that vanadium in surface water be considered to have high uncertainty.	It is suggested that the uncertainty for the vanadium risk assessment be classified as high. Of the 333 samples collected in the AEU since 1999, 9 were non-detects (<3%) and all had proxy values less than the chronic AWQC. This includes the 21 samples from Pond A-1 that were collected since 1999. No change will be made to the text.

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NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	33	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Selenium, (Based on revised text provided 6-24-06, no page numbers): The text should be revised to clarify that the statistics that are presented are based on detected concentrations only. For example, third sentence: A total of 7 percent of detected samples exceeded the chronic AWQC... Please correct each of the five instances which discuss sample statistics, but currently do not indicate they are based on detected results only. The same comment applies to the discussion for silver (2 instances).	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	34	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, 2-methylnaphthalene (Based on revised text provided 6-24-06, no page numbers): Statements regarding the percent of individual detected samples may be misleading since 100 percent of all detection or reporting limits are greater than the NOEC. The uncertainty related to this ECOPC is high and the risk level cannot be concluded with this high level of uncertainty.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	35	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Carbazole, (Based on revised text provided 6-24-06, no page numbers): Please revise the text to note that all but one of the detection or reporting limits are greater than the NOEC. The uncertainty related to this ECOPC should be indicated as low to moderate.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	36	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, PAHs, (Based on revised text provided 6-24-06, no page numbers): The text in the second paragraph which provides a brief explanation of risks related to individual versus total PAHs is not very clear. It is recommended that the paragraph beginning with "While it is important to consider risks from individual PAHs,..." be replaced with the text provided as an attachment to these comments. Please change "Proxy values in non-detected samples were elevated above the NOEC in all non-detected samples...", to, "in most non-detected samples.	The text will be revised as suggested.



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NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	37	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, PCBs, (Based on revised text provided 6-24-06, no page numbers): There are numerous inconsistencies between the tables and the text for the percents and numbers of samples reported (e.g., second paragraph 26% is reported, but 19% shown on tables; LOEC was exceeded by 7 samples is reported, but should be 8, and the total PCB LOEC was exceeded twice, not once as indicated in the text). Please verify all numbers in this section and correct the text and tables as needed. The text indicates that a spatial evaluation is presented on Figures 5.78 and 5.79, however, there are no sample locations shown on Figure 5.78 and less than 10 samples presented on Figure 5.79. Please verify that the figures are correct or indicate why there are no sample locations shown.	Inconsistencies will be corrected and the text will be revised accordingly.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	38	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, PCBs, (Based on revised text provided 6-24-06, no page numbers), second to last paragraph: Since all proxy values were in excess of the chronic AWQC, please indicate that the elevated proxy values for the non-detected samples introduces high uncertainty related to chronic risks in surface water (rather than "some uncertainty" as currently indicated).	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	39	VOL 15B2	Section 5.1.1, Chemical Risk Estimation for the NW AEU, Radium-228, (Based on revised text provided 6-24-06, no page numbers): It is not agreed that risks are uncertain. The available data, although limited, indicate that risks are likely. Please change the conclusion to indicate that based on the available data, risks would be moderate to high; however, due to the limited amount of data, the uncertainty associated with the risk estimate is high. In addition, please revise the last sentence to: "No risks from sediment are predicted from Radium-228."	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	40	VOL 15B2	Section 5.1.2.1, Ecosystem Data, (Revised text provided without page numbers): The text doesn't discuss the utility of the Microtox tests based on bioluminescent bacteria with regard to predicting potential impacts to fish and benthic invertebrate communities. Please revise the text to discuss the limitations associated with using Microtox data.	The text will be revised as suggested.

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NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	41	VOL 15B2	Section 5.1.2.1, Ecosystem Data, (Revised text provided without page numbers): Surface water toxicity test conclusions are based on acute toxicity, but do not address the fact that these acute tests do not speak to chronic effects (which, based on the HQs, looks to be more important than acute effects). Please revise the text to provide a similar evaluation based on chronic toxicity.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	42	VOL 15B2	Section 5.1.2.1, Ecosystem Data, (Revised text provided without page numbers): The surface water and sediment toxicity tests do not provide information on the levels of potential contaminants in the environmental media being tested. The information is presented in recently revised Attachment 7 (provided to the Agencies on June 7, 2006). It is noted that the concentrations of ECOPCs used in the toxicity testing are lower than the exposure point concentrations (EPCs) used to derive the hazard quotients for the AEU. While the toxicity testing results provide some utility in the overall interpretation of the HQs and potential for risks, it is not agreed that the lack of toxicity observed in these tests necessary represents the potential for toxicity based on the higher concentrations that are reported for the ECOPCs in the AEU. Please revise the text accordingly and see comments for newly revised Attachment 7 (provided below).	References to the lack of toxicity seen in the surface water and sediment toxicity tests as being representative of the EPC toxicity will be deleted.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	43	VOL 15B2	Section 5.1.2.1, Ecosystem Data, (Revised text provided without page numbers): The weight-basis of the tissue concentrations presented in the table are not designated (it appears that they are being interpreted as wet weight). Please clarify.	The weight-basis of the tissue concentrations will be added.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	44	VOL 15B2	Section 5.1.2.1, Ecosystem Data, (Revised text provided without page numbers): The tissue-based threshold value, which is based on effects in rainbow trout, may not be appropriate for the purposes of comparisons to benthic invertebrate tissues. Please revise the text to address this issue.	Comparisons to the tissue-based threshold value will be deleted.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	45	VOL 15B2	Section 5.1.2.1, Ecosystem Data, (Revised text provided without page numbers): Minor note: In this section, "Aroclor" is incorrectly spelled as "Arochlor".	The typographical error will be corrected.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	46	VOL 15B2	Section 5.1.2.2, Waterfowl and Wading Birds, Second paragraph: Please clarify that this is a summary and Attachment 7 provides details on how this risk-based screening was performed.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	47	VOL 15B2	Section 5.1.2.2, Waterfowl and Wading Birds, Fourth paragraph: It is indicated that Aroclor 1254 was detected in biota samples at concentrations much less than those predicted by generic log Kow-based uptake models. Please indicate the magnitude of the difference (e.g., 10x, 100x). In addition, please clarify why the B-series ponds are being referenced in the NW AEU.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	48	VOL 15B2	Section 5.1.2.2, Waterfowl and Wading Birds, Sixth paragraph: Two different terms are being used, BAF (in previous paragraphs) or BCF (in this paragraph). Please clarify the terminology being used. In addition, it is stated that aroclor 1254 was determined to be the "largest risk driver", but does not indicate the context (i.e., relative to what?). From the text provided, it appears only two chemicals were evaluated.	The text will be revised as suggested.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response																				
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	49	VOL 15B2	<p>Section 5.1.2.2, Waterfowl and Wading Birds, Eighth paragraph: The text is difficult to follow. It is recommended that paragraph be deleted and the following in-text table be added to end of the ninth paragraph: All EECs were calculated using NOAEL-based TRVs from Sample et al. (1996) which was based on reduced egg hatchability. The NOAEL was estimated from a LOAEL value that was ten times higher. (insert): The table below summarizes the calculated NOAEL-based EECs for the mallard and the heron.</p> <table><tr><th colspan="4">NOAEL-based EECs (mg/kg carbon)</th></tr><tr><th>Receptor</th><th>Prey Description</th><th>Site Use = 100%</th><th>Site Use = 50%</th></tr><tr><td>Mallard</td><td>Invertebrates??</td><td>123</td><td>245</td></tr><tr><td>Heron</td><td>Small forage fish</td><td>107</td><td>215</td></tr><tr><td></td><td>Predatory fish</td><td>22.1</td><td>44.3</td></tr></table>	NOAEL-based EECs (mg/kg carbon)				Receptor	Prey Description	Site Use = 100%	Site Use = 50%	Mallard	Invertebrates??	123	245	Heron	Small forage fish	107	215		Predatory fish	22.1	44.3	The text will be revised as suggested.
NOAEL-based EECs (mg/kg carbon)																										
Receptor	Prey Description	Site Use = 100%	Site Use = 50%																							
Mallard	Invertebrates??	123	245																							
Heron	Small forage fish	107	215																							
	Predatory fish	22.1	44.3																							
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - NORTH WALNUT AEU	50	VOL 15B2	<p>Section 5.1.2.2, Waterfowl and Wading Birds, last paragraph: It is stated that Di-n-butylphthalate is a common laboratory contaminant. However, the chemical may also be site related since no site-specific field blanks been presented to support this statement. Please also indicate that the field blanks did not show contamination and therefore the chemical may also be site related.</p>	The text will be revised as suggested.																				
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - SOUTH WALNUT AEU, RISK CHARACTERIZATION	51	VOL 15B2	<p>Ammonia: Second paragraph: The data are not presented on the table that is referenced (Table 5.9). Final paragraph: The most recent and only available data indicate that concentrations are above the chronic AWQC. It is not agreed that risks are low. Please revise the conclusion to indicate that risks are low to moderate with a moderate level of uncertainty.</p>	The text will be revised as suggested.																				
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - SOUTH WALNUT AEU, RISK CHARACTERIZATION	52	VOL 15B2	<p>2. Antimony: Third paragraph: Please indicate that the LOEC was also exceeded in drainages near the IA. Fifth paragraph: Antimony is misspelled. Sixth paragraph: The statements regarding the LOEC concentrations being bounded by non-detected samples is only valid if the detection limits were adequate. Please verify that the detection limits were below the NOEC/LOEC and revise the text and conclusions based on the adequacy of the detection limit.</p>	The detection limits will be verified and the text will be revised accordingly.																				



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NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - SOUTH WALNUT AEU, RISK CHARACTERIZATION	53	VOL 15B2	Cadmium: First paragraph: Please clarify that it is 6 percent of the detected samples. The statements regarding the higher average water hardness in the second to last sentence in this paragraph do not appear to be appropriate since AWQC is hardness-specific. Please clarify the statements or remove it from the text. Sixth paragraph: The last sentence states, "Cadmium was detected in all but one sediment sample...". This statement does not appear to be correct. Sixty-four samples were non-detect, only 1 out of 64 was greater than the ESL. Please verify.	These statements will be verified and the text will be revised accordingly.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - SOUTH WALNUT AEU, RISK CHARACTERIZATION	54	VOL 15B2	Fluoride: Final paragraph: It is not agreed that risks to the aquatic community can be characterized as "low" due to the 'small proportion of exceedances of the LOEC value'. Since no data were collected from primary aquatic habitat and there were LOEC exceedances in the upgradient areas that were sampled, risks to the aquatic community are largely unknown. Please revise the text to indicate there is a potential for moderate risks with high uncertainty since the LOEC was exceeded and it is not known if there are similar exceedances within the aquatic community.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - SOUTH WALNUT AEU, RISK CHARACTERIZATION	55	VOL 15B2	Zinc: The text indicates that zinc is not an ECOPC for surface water, thus, it is not clear why zinc is shown in the ECOPC table.	Zinc is an ECOPC and the text will be revised accordingly.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - SOUTH WALNUT AEU, RISK CHARACTERIZATION	56	VOL 15B2	PAHs: Third-to-last paragraph: The second and fourth sentences present conflicting information. Please verify and revise the text.	The text will be revised as suggested.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - SOUTH WALNUT AEU, RISK CHARACTERIZATION	57	VOL 15B2	PCBs: Second paragraph: It is stated that while it is important to consider risks from individual aroclors, the total exposure to and potential risks from PCBs may be more relevant at RFETS. Please indicate why this is true for RFETS.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	58	VOL 15B2	Antimony: Second and Third paragraph: Statements indicating that antimony was not detected are not supported since the detection limits were above the benchmarks. Please revise the statements or indicate that there is high uncertainty with the statements. Fifth paragraph: While the majority of the proxy values were less than the LOEC, it should also be noted that 49% of the non-detected concentrations are greater than the LOEC prohibiting a clear understanding of the spatial distribution of concentrations that may be above the LOEC. Please present a more balanced summary of the data limitations. Sixth Paragraph: It is not agreed that the low percentages of the LOEC indicate risks to the community are low. The statement is only appropriate if detection limits are adequate. Please revise the text to indicate why this statement is supported or revise it to state overall risks to the community are unknown.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	59	VOL 15B2	Cadmium: Fourth Paragraph: It is indicated that cadmium was not detected in Ponds C-1 or C-2. Please clarify if the detection or reporting limits were low enough to support this statement and revise the text as appropriate.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	60	VOL 15B2	Fluoride: Sixth paragraph: It is not agreed that there are enough data to support the conclusion that risks to the community are low. Please revise the statement to indicate risks to the community are uncertain due to the limited available data set.	The text will be revised as suggested.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	61	VOL 15B2	Mercury: Final Paragraph: Please indicate the percent of the samples that are less than the LOEC (instead of "most of the samples").	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	62	VOL 15B2	Nickel: Second Paragraph: The sample number count, 8 of the 9 samples, seems to be incorrect. Appears to be 8 of the 8 samples. Please verify.	The sample number count is 8 of the 8 samples. The text will be revised accordingly.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	63	VOL 15B2	Selenium: Second Paragraph: The sample number count, 10 of the 15 samples, seems to be incorrect. Appears to be 10 of the 12 samples. Please verify.	The sample number count is 10 of the 12 samples. The text will be revised accordingly.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	64	VOL 15B2	Silver: First paragraph: Please indicate that these are detected samples that are being discussed. Please clarify the dataset and indicate that 66% of the non-detections were greater than the ESL. It is not clear why a total hardness of 400 was used in calculations for the background dataset. Please clarify whether this was based on measured hardness concentrations in background.	The text will be revised as suggested. The total hardness concentration is the average.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	65	VOL 15B2	Zinc: Third paragraph: Pond C-2 is not discussed. Please add the summary for the pond.	Pond C-2 will be discussed.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	66	VOL 15B2	4-Methylphenol: First and Fourth paragraphs: The last sentence indicates that all non-detect samples were less than the LOEC. That should be all but 7 non-detect samples were less than the LOEC. Please revise the text. Fourth paragraph: Please indicate that the dataset is limited for Pond C-2 and downstream. Final Paragraph: Please indicate that risks are low, however, there is a limited dataset for some of the AEU.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	67	VOL 15B2	Heptachlor: First paragraph: Please quantify the statement "small number" in the last sentence. Fourteen percent had proxy values greater than the LOEC. Second paragraph: The discussion is misleading since all reporting or detection limits were greater than the NOEC. Please revise. Third paragraph: Please indicate that data are limited in C-2 and downstream of the pond.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	68	VOL 15B2	PAHs: Final paragraph: Please indicate that data are limited in C-2 and downstream of the pond.	The text will be revised as suggested.



EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	69	VOL 15B2	PCBs: Second paragraph: There is high uncertainty with the statement regarding the percent of detections above the NOEC. Please also indicate that 68% of the reporting or detection limits for non-detected concentrations were greater than the NOEC. Sixth paragraph: It is indicated that data are spatially adequate. Please indicate that data are limited in C-2 and downstream of the pond.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	70	VOL 15B2	Tables: Table 1.1: please revise to indicate which IHSSs are in each AEU. Table 2.1, appears to have the incorrect units or may be presenting data associated with a different media. Please present the correct units and verify the correct data associated with the surface water media are being presented. Table 2.3, no units are presented on the table.	The tables will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	71	VOL 15B2	Table 5.12, SW AEU WOE Conclusions: Third Column (Risk-based Conclusions for LOEC sediment): For AEU-wide, please add: low risk related to antimony, with detection limit issues; fluoride in ponds is uncertain; silver and PCBs are at levels of concern, but contained in subsurface sediments. Fifth Column (Risk-based Conclusions for Chronic AWQC): For AEU-wide, risks are low to moderate for ammonia. For Pond B-4, please add the risk conclusion. Seventh Column (Risk-based conclusions for Acute AWQC): For both AEU-wide and all ponds, risk conclusions have not been presented. Please indicate the risk levels in each of these areas. Waterfowl and Wading Birds, DOE (1996): It is indicated that current concentrations in sediments are similar to study conditions. It is not clear where this information is presented, therefore the statement could not be verified. Please indicate where the information is presented.	The waterfowl and wading bird section in the Risk Description provides several pages of text discussing the current concentrations of PCB, mercury and di-n-butylphthalate (the 3 ECOPCs identified for South Walnut Creek in DOE (1996)) in comparison with the concentrations discussed in DOE (1996) and the conclusions reached in that document. A reference to that section will be added.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	72	VOL 15B2	Figure 1.2: The text on Page 1 references Figure 1.2 in order to illustrate the IHSS locations. However, the IHSS locations are not legible on the figure and the IHSS names that are cited on the corresponding table (Table 1.1) are not presented on the figure. The figure does not serve the intended purpose. Please provide or reference a figure that illustrates the specific IHSS information.	Figures in Volume 2 will be referenced for IHSS locations.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	73	VOL 15B2	Figure 1.3: Figure 1.3 is cited and the AEU descriptions indicate that the AEU either receives or does not receive runoff from the IA, or that they are located in the BZ (e.g., Page 2, Section 1.1.2). However, Figure 1.3 does not designate the boundary of the IA or the BZ. Please add the features to the figure since the feature is important to understanding the potential for impacts from historical sources within the drainage. Please add a citation to Table 1.1 in the second paragraph for AEU's that indicate that there were IHSSs or other sources in the AEU.	The boundary separating the IA and BZ will be added to Figure 1.3. The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	74	VOL 15B2	Figure 1.6: Please add a label for No Name Gulch to the figure.	The label will be added to Figure 1.6.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	75	VOL 15B2	Figure 1.7: The figure does NOT present "Potential Aquatic Habitat Types Within RFETS" as implied by the title of the figure. The description of aquatic habitat types and the intention of this figure are not clear. Please add other aquatic habitat types to the figure or clarify the title and/or legend of the figure.	The title will be changed to "Intermittent and Perennial Stream Segments and Seep Locations at RFETS."
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	76	VOL 15B2	Figure 1.8 through 1.10: Remove, "background locations shown in red", and the associated symbols from the legend since they do not appear on the figures.	The background location symbol will be removed from the legend on Figures 1.8 and 1.9, but will remain on Figure 1.10 because there are background locations on this figure.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	77	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, GENERAL: The discussion of the professional judgment and the explanation for the categories is difficult to follow as presented. Because there are criteria for two different media being discussed for each category (surface water and sediment), it is requested that each category be presented with the Category-specific criteria listed beneath it using bullets.	Each category will be presented with the category-specific criteria listed beneath it using bullets.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	78	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, GENERAL: The summary/conclusion discussion has combined Categories 1 through 3 and indicates that all chemicals in the three categories introduce minimal uncertainty and low risks in the overall risk estimate because of the detection limits being higher than the criteria. It is not agreed that Category 3 should be grouped in with the other lower categories of less concern (Categories 1 and 2). Please separate the discussions. It is not agreed that the Category 3 ECOIs are of minimal uncertainty and have a low potential for risks as currently stated in the text. In most cases, if the Category 3 ECOIs were detected at the detection limits, these chemicals would have been identified as ECOPCs. Please revise the text and retain these chemicals as having potential data gaps and moderate to high uncertainty.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	79	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, GENERAL: The categories do not include several important criteria that should be considered when evaluating uncertainties and risks associated with having detection limits greater than the benchmarks being evaluated. For example, summary conclusion statements for categories 1 and 2 indicate that uncertainty in risks estimates because of high detection limits is likely to be low. This is only true if the magnitude of the ESL exceedances by the detection limit is low. Please use criteria consistent with those for each category as used for the evaluation of the terrestrial risk component of the CRA (i.e., as presented in the Exposure Units). All categories should be revised to include a component to evaluate the magnitude of ESL exceedance by the detection limits. Categories 3 and 4 should also indicate whether there are site wide exceedances. In addition, Category 3 includes those chemicals with a "low" detection frequency, while Category 4 includes those chemicals with a "high" detection frequency. It is recognized that the evaluation is subjective, however, please define the general criteria being used (e.g., low detection frequency equals less than 5 percent). An AEU-specific review will be completed following response/revisions based on these comments.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	80	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, GENERAL: The term "higher reported results" is used throughout the discussions. The term is not clear and may be misinterpreted since it actually refers to higher reported detection limits for non-detected ECOIs. Please revise this terminology so that it more clearly expresses that the detection limits were not adequate to evaluate the criteria or benchmarks.	"Reported Results" are not the "Detection Limits". The term is defined in the last paragraph on page 3.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	65	VOL 15B2	Zinc: Third paragraph: Pond C-2 is not discussed. Please add the summary for the pond.	Pond C-2 will be discussed.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	66	VOL 15B2	4-Methylphenol: First and Fourth paragraphs: The last sentence indicates that all non-detect samples were less than the LOEC. That should be all but 7 non-detect samples were less than the LOEC. Please revise the text. Fourth paragraph: Please indicate that the dataset is limited for Pond C-2 and downstream. Final Paragraph: Please indicate that risks are low, however, there is a limited dataset for some of the AEU.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	67	VOL 15B2	Heptachlor: First paragraph: Please quantify the statement "small number" in the last sentence. Fourteen percent had proxy values greater than the LOEC. Second paragraph: The discussion is misleading since all reporting or detection limits were greater than the NOEC. Please revise. Third paragraph: Please indicate that data are limited in C-2 and downstream of the pond.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	68	VOL 15B2	PAHs: Final paragraph: Please indicate that data are limited in C-2 and downstream of the pond.	The text will be revised as suggested.



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NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	69	VOL 15B2	PCBs: Second paragraph: There is high uncertainty with the statement regarding the percent of detections above the NOEC. Please also indicate that 68% of the reporting or detection limits for non-detected concentrations were greater than the NOEC. Sixth paragraph: It is indicated that data are spatially adequate. Please indicate that data are limited in C-2 and downstream of the pond.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	70	VOL 15B2	Tables: Table 1.1: please revise to indicate which IHSSs are in each AEU. Table 2.1, appears to have the incorrect units or may be presenting data associated with a different media. Please present the correct units and verify the correct data associated with the surface water media are being presented. Table 2.3, no units are presented on the table.	The tables will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	71	VOL 15B2	Table 5.12, SW AEU WOE Conclusions: Third Column (Risk-based Conclusions for LOEC sediment): For AEU-wide, please add: low risk related to antimony, with detection limit issues; fluoride in ponds is uncertain; silver and PCBs are at levels of concern, but contained in subsurface sediments. Fifth Column (Risk-based Conclusions for Chronic AWQC): For AEU-wide, risks are low to moderate for ammonia. For Pond B-4, please add the risk conclusion. Seventh Column (Risk-based conclusions for Acute AWQC): For both AEU-wide and all ponds, risk conclusions have not been presented. Please indicate the risk levels in each of these areas. Waterfowl and Wading Birds, DOE (1996): It is indicated that current concentrations in sediments are similar to study conditions. It is not clear where this information is presented, therefore the statement could not be verified. Please indicate where the information is presented.	The waterfowl and wading bird section in the Risk Description provides several pages of text discussing the current concentrations of PCB, mercury and di-n-butylphthalate (the 3 ECOPCs identified for South Walnut Creek in DOE (1996)) in comparison with the concentrations discussed in DOE (1996) and the conclusions reached in that document. A reference to that section will be added.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	72	VOL 15B2	Figure 1.2: The text on Page 1 references Figure 1.2 in order to illustrate the IHSS locations. However, the IHSS locations are not legible on the figure and the IHSS names that are cited on the corresponding table (Table 1.1) are not presented on the figure. The figure does not serve the intended purpose. Please provide or reference a figure that illustrates the specific IHSS information.	Figures in Volume 2 will be referenced for IHSS locations.

EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	73	VOL 15B2	Figure 1.3: Figure 1.3 is cited and the AEU descriptions indicate that the AEU either receives or does not receive runoff from the IA, or that they are located in the BZ (e.g., Page 2, Section 1.1.2). However, Figure 1.3 does not designate the boundary of the IA or the BZ. Please add the features to the figure since the feature is important to understanding the potential for impacts from historical sources within the drainage. Please add a citation to Table 1.1 in the second paragraph for AEU's that indicate that there were IHSSs or other sources in the AEU.	The boundary separating the IA and BZ will be added to Figure 1.3. The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	74	VOL 15B2	Figure 1.6: Please add a label for No Name Gulch to the figure.	The label will be added to Figure 1.6.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	75	VOL 15B2	Figure 1.7: The figure does NOT present "Potential Aquatic Habitat Types Within RFETS" as implied by the title of the figure. The description of aquatic habitat types and the intention of this figure are not clear. Please add other aquatic habitat types to the figure or clarify the title and/or legend of the figure.	The title will be changed to "Intermittent and Perennial Stream Segments and Seep Locations at RFETS."
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	76	VOL 15B2	Figure 1.8 through 1.10: Remove, "background locations shown in red", and the associated symbols from the legend since they do not appear on the figures.	The background location symbol will be removed from the legend on Figures 1.8 and 1.9, but will remain on Figure 1.10 because there are background locations on this figure.

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NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	77	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, GENERAL: The discussion of the professional judgment and the explanation for the categories is difficult to follow as presented. Because there are criteria for two different media being discussed for each category (surface water and sediment), it is requested that each category be presented with the Category-specific criteria listed beneath it using bullets.	Each category will be presented with the category-specific criteria listed beneath it using bullets.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	78	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, GENERAL: The summary/conclusion discussion has combined Categories 1 through 3 and indicates that all chemicals in the three categories introduce minimal uncertainty and low risks in the overall risk estimate because of the detection limits being higher than the criteria. It is not agreed that Category 3 should be grouped in with the other lower categories of less concern (Categories 1 and 2). Please separate the discussions. It is not agreed that the Category 3 ECOIs are of minimal uncertainty and have a low potential for risks as currently stated in the text. In most cases, if the Category 3 ECOIs were detected at the detection limits, these chemicals would have been identified as ECOPCs. Please revise the text and retain these chemicals as having potential data gaps and moderate to high uncertainty.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	79	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, GENERAL: The categories do not include several important criteria that should be considered when evaluating uncertainties and risks associated with having detection limits greater than the benchmarks being evaluated. For example, summary conclusion statements for categories 1 and 2 indicate that uncertainty in risks estimates because of high detection limits is likely to be low. This is only true if the magnitude of the ESL exceedances by the detection limit is low. Please use criteria consistent with those for each category as used for the evaluation of the terrestrial risk component of the CRA (i.e., as presented in the Exposure Units). All categories should be revised to include a component to evaluate the magnitude of ESL exceedance by the detection limits. Categories 3 and 4 should also indicate whether there are site wide exceedances. In addition, Category 3 includes those chemicals with a "low" detection frequency, while Category 4 includes those chemicals with a "high" detection frequency. It is recognized that the evaluation is subjective, however, please define the general criteria being used (e.g., low detection frequency equals less than 5 percent). An AEU-specific review will be completed following response/revisions based on these comments.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	80	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, GENERAL: The term "higher reported results" is used throughout the discussions. The term is not clear and may be misinterpreted since it actually refers to higher reported detection limits for non-detected ECOIs. Please revise this terminology so that it more clearly expresses that the detection limits were not adequate to evaluate the criteria or benchmarks.	"Reported Results" are not the "Detection Limits". The term is defined in the last paragraph on page 3.

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NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	81	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, General, SURFACE WATER: The current description for Categories 3 and 4 do not clearly address or evaluate the two different risk levels that are performed for surface water (acute and chronic). For example, one of the criteria for Category 3 is based on ECOIs with the MDCs within the same order of magnitude (i.e., HQs up to the 10). This is clearly not appropriate when evaluating the potential uncertainty of the detection limit adequacy associated with acute criteria. The criterion for Category 3 for acute should be revised to be based on detection limits that would result in HQs greater than 1, and for chronic, detection limits that range from HQs 5 to 10. As indicated above, ECOIs that are designated in Category 3 should then be considered moderate to high uncertainty. For Category 4, the criterion for surface water is "MDCs substantially exceed the ESL". The criterion should be revised to be MDCs with HQs greater than 2 for acute criteria and greater than 10 for chronic criteria.	Although a criterion related to a comparison of reported results to acute criteria could have been included in the definition of the uncertainty categories, considerable revisions to the document would be required to accommodate the change. The reported result-acute criteria comparison is addressed separately.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	82	VOL 15B2	Attachment 1, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units, General, SEDIMENT: The current description for Categories 3 and 4 do not indicate the risk level that is being used for evaluation of the sediment criteria. Please clarify whether it is the NOEC or the LOEC being used. For Category 3, the criterion for the LOEC should be HQs from 1 to 5 and up to 10 for the NOEC.	Although a criterion related to a comparison of reported results to the LOEC could have been included in the definition of the uncertainty categories, considerable revisions to the document would be required to accommodate the change. The reported result-LOEC comparison is addressed separately.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	83	VOL 15B2	Attachment 1, Page 2, Evaluation of Analyte Detection Limits for the Aquatic Exposure Units: It is not agreed that, "For the first three categories the uncertainty with regard to the overall risk estimates because of the higher detection limits is considered small", as stated in the text. In most cases, if the Category 3 ECOIs were detected at the detection limits, these chemicals would have been identified as ECOPCs. Please revise the text and retain these chemicals as having potential data gaps and moderate to high uncertainty.	The text will be revised as suggested.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	84	VOL 15B2	Attachment 1, Page 3, Section 1.1.1, North Walnut Creek AEU, Surface Water, fourth paragraph: It is indicated that analytes in categories 1 through 3 are not likely to be present in the NWAUEU based on professional judgment. However, one of the criteria for an ECOI to be classified within Category 3 is for the chemical to have a "low" detection frequency. It is not agreed that "professional judgment" can be used to say that the chemical is not likely to be present for chemicals that have been detected in the AEU. It is requested that Category 3 not be summarized as being similar to categories 1 and 2. Please revise the text to address this issue.	The text will be revised as suggested.



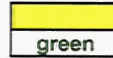
EU	Source	Comment Type	No.	Comment Scope	Comment	Response
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION	85	VOL 15B2	Table A1.2.NW AEU2: Please insert the word "detected" prior to "conc." in columns 4, 6, 8, and 10. Please insert the word "Chronic" above or prior to "ESL" in the 14th column.	The table headings will be clarified.
NW AEU, SW AEU, WC AEU	EPA	SPECIFIC - WOMAN CREEK AEU, RISK CHARACTERIZATION		VOL 15B2	ATTACHMENT 7: In progress.	Attachment 7 will be completed for the Final CRA.

**Draft CRA Review Comments**  
**TABLE C1: Does General Comment Apply to this EU Volume?**

General comment	Vol 3 - WAEU	Vol 4 - RCEU	Vol 5 - IDEU	Vol 6 - NNEU	Vol 7 - UWNEU	Vol 8 - LWNEU	Vol 9 - WBEU	Vol 10 - UWOEU	Vol 11 - LWOEU	Vol 12 - SWEU	Vol 13 - SEEU	Vol 14 - IAEU
G1 Data Adequacy Summary	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G2 Flora and Fauna	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G3 Data Description	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G4 References to AAs	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G5 Ecological SCM and ROCs	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G6 Essential Nutrients	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G7 Western US State Soils	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G8 Western US State Soils for PMJM	no	YES	YES	YES	YES	YES	no	no	no	no	no	no
G9 Comparison of ESLs to Background	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G10 Comparison of Site to Background	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G11 Process Knowledge & Spatial Trends	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G12 Professional Judgment Conclusions for Outlying EUs	YES	YES	no	no	no	YES	no	no	no	YES	YES	no
G13 Uncertainty Analysis	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G14 Detection Limit Types	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G15 Sample Location Figures	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G16 Ecological Risk Potential	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G17 Probability Plots	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G18 Uncertainties w/ECOI Elimination	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G19 Units for Dose	no	no	YES	YES	YES	no	YES	YES	YES	no	no	YES
G20 HQ Summary Table Shading	no	no	YES	YES	YES	YES	YES	YES	YES	no	no	YES
G21 Preferential Selection of Eco-SSL TRVs	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G22 Evaluation of Surface Water Ingestion	no	no	YES	YES	YES	no	YES	YES	YES	no	no	YES
G23 DL Adequacy in Risk Characterization	no	no	YES	YES	YES	YES	YES	YES	YES	no	no	YES
G24 Bkg Comparison for PMJM	no	YES	YES	YES	YES	YES	no	no	YES	YES	no	no
G25 Addtl PMJM ECOPC Selection Step	no	no	YES	YES	YES	no	no	YES	YES	no	no	no
G26 Use of EcoSSL Geomean TRVs	no	no	YES	YES	YES	no	no	YES	no	no	no	YES
G27 Alternate TRV Description for Nickel	no	no	no	YES	YES	no	YES	YES	YES	no	no	no
G28 Tributyltin TRV Uncertainties	no	no	no	YES	YES	no	YES	YES	YES	no	no	YES
G29 LOAEL TRV for Bis(2-ethylhexyl)phthalate	no	no	no	YES	YES	no	no	YES	no	no	no	YES

**Draft CRA Review Comments**  
**TABLE C1: Does General Comment Apply to this EU Volume?**

General comment	Vol 3 - WAEU	Vol 4 - RCEU	Vol 5 - IDEU	Vol 6 - NNEU	Vol 7 - UWNEU	Vol 8 - LWNEU	Vol 9 - WBEU	Vol 10 - UWOEU	Vol 11 - LWOEU	Vol 12 - SWEU	Vol 13 - SEEU	Vol 14 - IAEU
G30 Uptake Model Basis for Total PCB	no	no	no	YES	YES	no	YES	YES	no	no	no	YES
G31 IHSS Identification in Maps	no	no	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G32 Ecosystem Characterization Section	no	no	YES	YES	YES	YES	YES	YES	YES	no	no	no
G33 Prof Judg: Molybdenum Risk Potential	no	no	no	no	no	YES	YES	YES	no	no	no	no
G34 Chromium Ecological Toxicity	no	no	no	no	no	YES	YES	YES	YES	no	no	YES
G35 DL Adequacy Reference to PRGs	no	no	no	YES	YES	no	YES	no	no	no	no	YES



This report identified ECOPCs and performed HQ calculations.

This report included a PMJM habitat evaluation.

**Draft CRA Comments: TABLE C2. PROFESSIONAL JUDGEMENT CONCLUSIONS**

Inorganic Analyte of Interest	Process Knowledge		Spatial Trends	
	Expected contaminant at RFETS?	Location of Possible Contamination	Surface Soil	Subsurface Soil
Aluminum	Yes	not specified; RFETS	--	n/a
Antimony	Yes	WBEU, LWOEU, NNEU	++	+
Arsenic	Yes	NNEU, IAEU, WBEU, LWOEU	+	--
Barium	No	---	--	n/a
Boron	No	---	--	n/a
Cadmium	???	???	???	???
Chromium	Yes	not specified; RFETS	+	n/a
Copper	Yes	LWOEU	+	n/a
Lead	Yes	not specified; RFETS	+	n/a
Lithium	Yes	not specified; RFETS	--	n/a
Manganese	No	---	+	n/a
Mercury	Yes	not specified; RFETS	++	n/a
Molybdenum	No	---	+	n/a
Nickel	Yes	not specified; RFETS	+	n/a
Selenium	No	---	+	n/a
Silver	Yes	not specified; RFETS	++	n/a
Thallium	No	---	+	n/a
Tin	Yes	not specified; RFETS	++	n/a
Uranium	Yes	not specified; RFETS	++	n/a
Vanadium	Yes	NNEU	--	n/a
Zinc	Yes	not specified; RFETS	++	n/a

??? = cadmium not included in Professional Judgment

n/a = not applicable; not identified as a potential ECOPC in any EU

-- = maps show no spatial trend

+ = maps show possible spatial trend

++ = maps show strong spatial trend



Draft CRA Review Comments

TABLE C3: VOLUME 2, ATTACHMENT 8: SUMMARY OF PROFESSIONAL JUDGEMENT CONCLUSIONS FOR NON-PMJM (SURFACE SOIL)

Analyte of Interest	Process Knowledge		Spatial Trends (a)		Retain/Exclude as Potential ECOPC Based on Spatial Trends											
	Expected contaminant at RFETS?	Where?	Surf. Soil	Subsurf. Soil	Vol 3 - WAEU	Vol 4 - RCEU	Vol 5 - IDEU	Vol 6 - NNEU	Vol 7 - UWNEU	Vol 8 - LWNEU	Vol 9 - WBEU	Vol 10 - UWOEU	Vol 11 - LWOEU	Vol 12 - SWEU	Vol 13 - SEEU	Vol 14 - IAEU
Aluminum	Yes	not specified; RFETS	No	n/a	exclude	exclude	exclude		exclude	exclude	exclude		exclude	exclude	exclude	
Antimony	Yes	WBEU, LWOEU, NNEU	Yes	Yes (?)			SHOULD RETAIN	RETAIN	RETAIN	exclude		RETAIN	SHOULD RETAIN			RETAIN
Arsenic	Yes	NNEU, IAEU, WBEU, LWOEU	Yes (?)	No	exclude		exclude									
Barium	No	---	No	n/a		exclude		RETAIN			exclude	exclude				
Boron	No	---	No	n/a	exclude	exclude	exclude	exclude	exclude	exclude	exclude	exclude	exclude	exclude	exclude	exclude
Cadmium	??	???	???	???	???	???	???	???	???	???	???	???	???	???	???	???
Chromium	Yes	not specified; RFETS	Yes (?)	n/a	exclude	SHOULD RETAIN	SHOULD RETAIN			SHOULD RETAIN	RETAIN		RETAIN	SHOULD RETAIN	SHOULD RETAIN	RETAIN
Copper	Yes	LWOEU	Yes (?)	n/a				RETAIN	RETAIN			RETAIN	RETAIN		exclude	RETAIN
Lead	Yes	not specified; RFETS	Yes (?)	n/a			RETAIN									
Lithium	Yes	not specified; RFETS	No	n/a	exclude	exclude	exclude			exclude	exclude		exclude	exclude	exclude	
Manganese	No	---	Yes (?)	n/a		SHOULD RETAIN					RETAIN		RETAIN		exclude	
Mercury	Yes	not specified; RFETS	Yes	n/a				RETAIN								
Molybdenum	No	---	Yes (?)	n/a		exclude		RETAIN	RETAIN	exclude	SHOULD RETAIN	exclude		exclude	exclude	RETAIN
Nickel	Yes	not specified; RFETS	Yes (?)	n/a		SHOULD RETAIN		RETAIN	RETAIN	SHOULD RETAIN	RETAIN	RETAIN	RETAIN	SHOULD RETAIN	SHOULD RETAIN	
Selenium	No	---	Yes (?)	n/a						exclude						
Silver	Yes	not specified; RFETS	Yes	n/a					RETAIN		RETAIN	RETAIN				
Thallium	No	---	Yes (?)	n/a	exclude						RETAIN		RETAIN			
Tin	Yes	not specified; RFETS	Yes	n/a		SHOULD RETAIN	SHOULD RETAIN	RETAIN	RETAIN	SHOULD RETAIN	RETAIN	RETAIN	RETAIN			RETAIN
Uranium	Yes	not specified; RFETS	Yes	n/a							SHOULD RETAIN	RETAIN				
Vanadium	Yes	NNEU	No	n/a		exclude			RETAIN	exclude		RETAIN	RETAIN	exclude	exclude	
Zinc	Yes	not specified; RFETS	Yes	n/a		SHOULD RETAIN			RETAIN	SHOULD RETAIN			SHOULD RETAIN		exclude	

(a) In general, are soil concentrations higher in site-impacted areas relative to buffer areas?

n/a - not applicable; not identified as a potential ECOPC in any EU

= identified as ECOI for this EU  
(e.g., failed the bkg screen)

**SHOULD RETAIN**

Should not exclude based on evidence presented

**Draft CRA Review Comments**  
**TABLE C4. SUMMARY OF PROFESSIONAL JUDGEMENT CONCLUSIONS FOR PMJM (SURFACE SOIL)**

Analyte of Interest	Process Knowledge		Spatial Trends (a)		Retain/Exclude as Potential ECOPC Based on Spatial Trends											
	Expected contaminant at RFETS?	Where?	Surf. Soil	Subsurf. Soil	Vol 3 - WAEU	Vol 4 - RCEU	Vol 5 - IDEU	Vol 6 - NNEU	Vol 7 - UWNEU	Vol 8 - LWNEU	Vol 9 - WBEU	Vol 10 - UWOEU	Vol 11 - LWOEU	Vol 12 - SWEU	Vol 13 - SEEU	Vol 14 - IAEU
Antimony	Yes	WBEU, LWOEU, NNEU	Yes	Yes (?)					RETAIN			RETAIN				
Cadmium	??	???	???	???	???	???	???	???	???	???	???	???	???	???	???	???
Chromium	Yes	not specified; RFETS	Yes (?)	n/a		SHOULD RETAIN				SHOULD RETAIN		RETAIN	RETAIN	SHOULD RETAIN		
Copper	Yes	LWOEU	Yes (?)	n/a								RETAIN	RETAIN			
Manganese	No	---	Yes (?)	n/a		SHOULD RETAIN							RETAIN			
Molybdenum	No	---	Yes (?)	n/a		exclude						RETAIN				
Nickel	Yes	not specified; RFETS	Yes (?)	n/a		SHOULD RETAIN		RETAIN	RETAIN	SHOULD RETAIN		RETAIN	RETAIN	SHOULD RETAIN		
Selenium	No	---	Yes (?)	n/a					exclude	exclude			RETAIN			exclude
Tin	Yes	not specified; RFETS	Yes	n/a		SHOULD RETAIN			RETAIN			RETAIN	SHOULD RETAIN	exclude		
Vanadium	Yes	NNEU	No	n/a		exclude			RETAIN	exclude		RETAIN	RETAIN	exclude		
Zinc	Yes	not specified; RFETS	Yes	n/a				RETAIN	RETAIN			RETAIN	RETAIN			

(a) In general, are soil concentrations higher in site-impacted areas relative to buffer areas?  
n/a - not applicable; not identified as a potential ECOPC in any EU

SHOULD RETAIN = identified as potential ECOPC for this EU  
(e.g., failed the bkg screen)

SHOULD RETAIN

Should not exclude

**Table C5**

<b>Description</b>	<b>Number Qualified</b>	<b>Before V&amp;V</b>	<b>After V&amp;V</b>	<b>After DQA</b>
<b>Complete Database (unparsed)</b>	<b>Total N</b>			
	N-Not Qualified			
	N-R Qualified			
	N-Non-V&V			
	% R Qualified			
	% Non-V&V			
	% Qualified			
<b>Water-Dioxins/Furans</b>	<b>Total N</b>			
	N-Not Qualified			
	N-R Qualified			
	% R Qualified			
	% Qualified			
	% non-V&V			
	% Qualified			
<b>Metals-Soil</b>	<b>Total N</b>			
	N-Not Qualified			
	N-R Qualified			

**Table C6**

Exposure Unit or IHSS Description	EU or IHSS	V&V Qualification Assignments				DQA Qualification Assignments	
		Laboratory QC Sample Type				Field Sample Type	Overall DQA Qualification
		Blank	Matrix Spike	Laboratory Duplicate	LCS	Field Duplicate	
	EU						
	IHSS						
	EU						



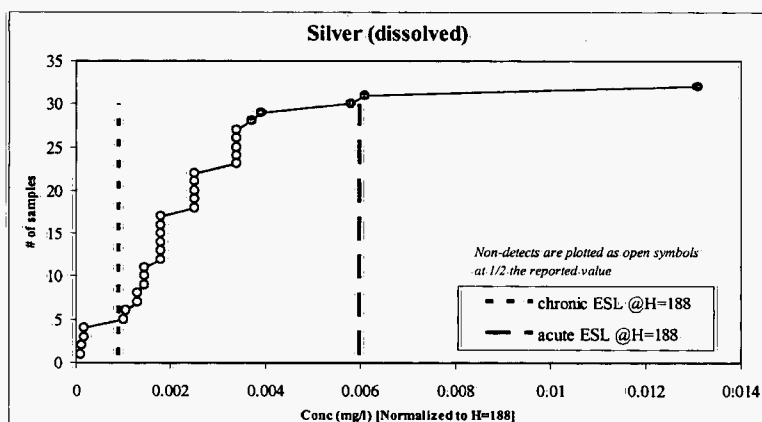
**Table C7: Draft CRA Comments - Dioxin Hazard Quotient Check**

Csoil (ug/kg)	<b>0.017</b> ← <b>Correct ESL</b>	Csoil (ug/kg)	<b>0.015</b> ← <b>Wrong ESL</b>
Csoil (mg/kg)	1.7E-05	Csoil (mg/kg)	1.5E-05
<u>Coyote (insectivore)</u>		<u>Coyote (insectivore)</u>	
FIR (kg dw/kg/d)	0.015	FIR (kg dw/kg/d)	0.015
%soil	2.8	%soil	2.8
SIR (kg dw/kg/d)	0.00042	SIR (kg dw/kg/d)	0.0004
WIR (L/kg/d)	0.08	WIR (L/kg/d)	0.08
<u>Worm BAF</u>		<u>Worm BAF</u>	
slope	1.2	slope	1.2
intercept	3.53	intercept	3.53
Cworm (mg/kg dw)	6.62E-05	Cworm (mg/kg dw)	5.4E-05
<u>Dose (mg/kg/d)</u>		<u>Dose (mg/kg/d)</u>	
worm	9.93E-07	worm	8.07E-07
soil	7.29E-09	soil	6.14E-09
total	1E-06	total	8.13E-07
<u>TRV (mg/kg/d)</u>		<u>TRV (mg/kg/d)</u>	
NOAEL	1.00E-06	NOAEL	1.00E-06
LOAEL	1.00E-05	LOAEL	1.00E-05
<u>HQ</u>		<u>HQ</u>	
NOAEL	<b>1.00</b>	NOAEL	<b>0.81</b>
LOAEL	0.10	LOAEL	0.08

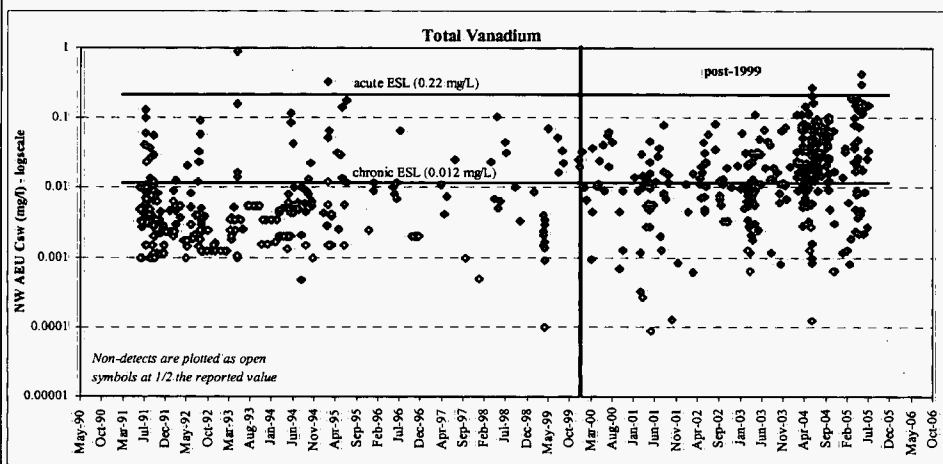
Table C8

Raw Statistics		Normal Distribution Test	
Number of Valid Samples	4	Shapiro-Wilk Test Statistic	0.841454
Number of Unique Samples	4	Shapiro-Wilk 5% Critical Value	0.748
Minimum	0.00542	Data are normal at 5% significance level	
Maximum	0.01053	95% UCL (Assuming Normal Distribution)	
Mean	0.007255	Student's-t UCL	0.009904
Median	0.006535	Gamma Distribution Test	
Standard Deviation	0.002251	A-D Test Statistic	0.431685
Variance	5.07E-06	A-D 5% Critical Value	0.657094
Coefficient of Variation	0.310317	K-S Test Statistic	0.33271
Skewness	1.637983	K-S 5% Critical Value	0.394539
Gamma Statistics		Data follow gamma distribution at 5% significance level	
k hat	15.67047	95% UCLs (Assuming Gamma Distribution)	
k star (bias corrected)	4.084263	Approximate Gamma UCL	0.011504
Theta hat	0.000463	Adjusted Gamma UCL	N/A
Theta star	0.001776	Lognormal Distribution Test	
nu hat	125.3637	Shapiro-Wilk Test Statistic	0.893487
nu star	32.67427	Shapiro-Wilk 5% Critical Value	0.748
Approx. Chi Square Value (.05)	20.60535	Data are lognormal at 5% significance level	
Adjusted Level of Significance	N/A	95% UCLs (Assuming Lognormal Distribution)	
Adjusted Chi Square Value	N/A	95% H-UCL	0.012319
Log-transformed Statistics		95% Chebyshev (MVUE) UCL	0.011709
Minimum of log data	-5.217659	97.5% Chebyshev (MVUE) UCL	0.013642
Maximum of log data	-4.553527	99% Chebyshev (MVUE) UCL	0.01744
Mean of log data	-4.958311	95% Non-parametric UCLs	
Standard Deviation of log data	0.28488	CLT UCL	0.009107
Variance of log data	0.081156	Adj-CLT UCL (Adjusted for skewness)	0.010092
RECOMMENDATION		Mod-t UCL (Adjusted for skewness)	0.010058
Data are normal (0.05)		Jackknife UCL	0.009904
Use Student's-t UCL		Standard Bootstrap UCL	N/R
		Bootstrap-t UCL	N/R
		Hall's Bootstrap UCL	N/R
		Percentile Bootstrap UCL	N/R
		BCA Bootstrap UCL	N/R
		95% Chebyshev (Mean, Sd) UCL	0.012162
		97.5% Chebyshev (Mean, Sd) UCL	0.014285
		99% Chebyshev (Mean, Sd) UCL	0.018455

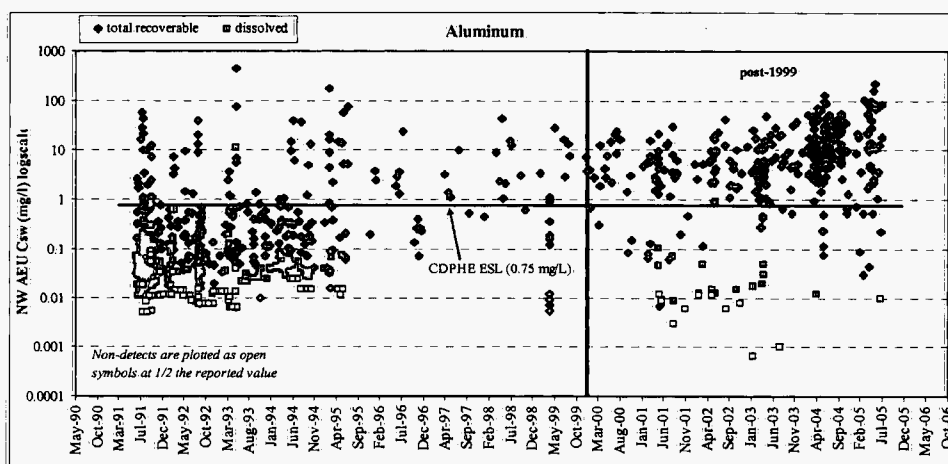
Draft CRA Comments: Figure C1  
Example: Data Distribution for Silver (dissolved) in Surface Water



Draft CRA Comments: Figure C2  
Example: Temporal Presentation of Vanadium (total) Concentrations in Surface Water for NW AEU



Draft CRA Comments: Figure C3  
Example: Temporal Presentation of Aluminum (total recoverable & dissolved) Concentrations in Surface Water for NW AEU



Aluminum (total)							
Post-1991 Dataset				Post-1999 Dataset			
N	MDC	UTL	UCL	N	MDC	UTL	UCL
672	442	27.2	17.4	294	129	38.1	17.9

**Table R1**  
**Additional "No Aquatic Exposure" Surface Water Sample Locations**

LOCATION CODE	LONGITUDE	LATITUDE	ELEVATION	Media Type	Sample Type Code	Description	Rationale for NAE <sup>1</sup>
207A	2084656	750650.375	5970.62	SurfaceWater	SW	SOLAR POND 207A	Solar Ponds no longer exist
207A-NORTH	2084829	750970.375	5970.18	SurfaceWater	SW	SOLAR POND 207A NORTH END	Solar Ponds no longer exist
207A-SOUTH	2084696	750468.125	5971.24	SurfaceWater	SW	SOLAR POND 207A SOUTH END	Solar Ponds no longer exist
207B-C	2084949	750680	5966.76	SurfaceWater	SW	SOLAR POND 207B CENTER	Solar Ponds no longer exist
207B-NORTH	2084941	750883.625	5968.49	SurfaceWater	SW	SOLAR POND 207B NORTH	Solar Ponds no longer exist
207B-SOUTH	2084954	750495.313	5966.54	SurfaceWater	SW	SOLAR POND 207B SOUTH	Solar Ponds no longer exist
443STEAM	2082128	749117.375	6022.59	SurfaceWater	SW	B443 STEAM PLANT	Building 443 no longer exists
750PAD	2084570	749872.125	5975.54	SurfaceWater	SW	750 PAD	750 Pad, with associated runoff, no longer exists
750PADLEAK	2084570	749872.125	5975.54	SurfaceWater	SW	750 PAD	750 Pad, with associated runoff, no longer exists
750PARKING	2084570	749872.125	5975.54	SurfaceWater	SW	750 PAD	750 Pad, with associated runoff, no longer exists
904PAD	2085178	749166.625	5978.68	SurfaceWater	SW	904 PAD	904 Pad, with associated runoff, no longer exists
990 NORTH	2085539.23	750333.39	5962.04	SurfaceWater	SW	B990 SANITARY SEWER INFLUENT NORTH WEIR	San. sewer system eliminated, no more influent/effluent
990 SOUTH	2085538.55	750327.54	5962.09	SurfaceWater	SW	B990 SANITARY SEWER INFLUENT SOUTH WEIR	San. sewer system eliminated, no more influent/effluent
995EFF	2086347.39	750266.92	5904.65	SurfaceWater	SW	EFFLUENT TO SEWAGE TREATMENT PLANT COLLECTED AT HEADWORKS OF PLANT	San. sewer system eliminated, no more influent/effluent
995INF	2086184.29	750368.172	5925.62	SurfaceWater	SW	INFLUENT TO SEWAGE TREATMENT PLANT COLLECTED AT HEADWORKS OF PLANT	San. sewer system eliminated, no more influent/effluent
B124 SUMP D2	2081463	748616		SurfaceWater	SW	B124 SUMP D2 (PUMPING STATION D-1) EAST OF B124	Building 124, sumps, and pump stations no longer exist
B124 SUMP D3	2081499	748580		SurfaceWater	SW	B124 SUMP D3 (PUMP PIT D-3) SE OF B124	Building 124, sumps, and pump stations no longer exist
BS-111-2	2081422.823	749369.929	6037.92	SurfaceWater	SW	B111 SUMP LOCATED IN SE CORNER OF BASEMENT	Building 111 and sumps no longer exist



**Table R1**  
**Additional "No Aquatic Exposure" Surface Water Sample Locations**

LOCATION CODE	LONGITUDE	LATITUDE	ELEVATION	Media Type	Sample Type Code	Description	Rationale for NAE <sup>1</sup>
BS-707-2	2083945.627	749742.884	5983.75	SurfaceWater	SW	B707 SUMP IN PUMP PIT BETWEEN COOLING TOWER (NORTH SIDE OF B709) AND B707	Building 707 and sumps no longer exist
BS-865-1	2084051.943	749067.443	5991.1	SurfaceWater	SW	B865 SUMP IN MANHOLE ON WEST SIDE OF BUILDING	Building 865 and sumps no longer exist
BS-865-2	2084238.451	749122.373	5991.09	SurfaceWater	SW	B865 FOOTING DRAIN OUTSIDE DOOR 1	Building 865 footing drains no longer exist
BX38-023	2082334.37	749127.5	6020.46	SurfaceWater	SW	UBC 442 - FILTER TEST FACILITY	Building 442 no longer exists
FD-771-1	2083557.13	751088.605	5947.87	SurfaceWater	SW	B771 FOOTING DRAIN OUTLET IS DOWN THE HILLSIDE, APPROXIMATELY 50 FT SW OF THE SW CORNER OF OLD 773 GUARD POST	Building 771 footing drain #1 no longer exists
FD-790	2083229.707	751120.797	5948.01	SurfaceWater	SW	B790 FOOTING DRAIN MANHOLE SW CORNER OF B790	Building 790 footing drain no longer exists
FD-881-1	2083963.701	748000.235	5955.66	SurfaceWater	SW	B881 FOOTING DRAIN ON HILLSIDE OUTSIDE OF SECURITY FENCE SOUTH OF THE MIDDLE OF BUILDING AND WEST OF GS24	Building 881 footing drain no longer exists
FD-883-1	2083709.93	748718.109	6000.49	SurfaceWater	SW	B883 SUMP PUMP IN MANHOLE DIRECTLY WEST OF SOUTHWEST CORNER OF B883	Building 883 and sumps no longer exist
FD-886-1	2084364.516	748988.076	5988.51	SurfaceWater	SW	B886 MANHOLE AT NORTHEAST CORNER OF B875, COLLECTION PT FOR B886/875 TUNNEL DRAIN	Buildings 886 and 875 and collection tunnel no longer exist
FD-886-2	2084371.454	749043.578	5988.01	SurfaceWater	SW	B886 FOOTING DRAIN MANHOLE LOCATED ON WEST SIDE OF B886	Building 886 footing drain no longer exists
FD-910	2085233.331	750357.522	5968.56	SurfaceWater	SW	B910 FOOTING DRAIN MANHOLE/SUMP LOCATED NORTH SIDE OF B910 14 FT BGS	Building 910 footing drain no longer exists
GS23	2083811.772	747890.956	5953.56	SurfaceWater	SW	B887 SEPTIC LIFT STATION OVERFLOW ON HILL SOUTH OF B881	Building 887 septic lift station no longer exists
LANDFILL_TANK_3	2084570	752000	5941.58	SurfaceWater	SW	MODULAR STORAGE TANK C	Modular Storage Tanks (north of SEPs) no longer exist
MET_STA	2078677.56	751270.56	6071.45	SurfaceWater	SW	MET STATION 61 METER TOWER	Met Station no longer exists
MOD_ST_TNK_A	2084246.9	751913.6	5939.95	SurfaceWater	SW	MODULAR STORAGE TANK A	Modular Storage Tanks (north of SEPs) no longer exist
MOD_ST_TNK_B	2084384.1	751940.6	5940.03	SurfaceWater	SW	MODULAR STORAGE TANK B	Modular Storage Tanks (north of SEPs) no longer exist
MOD_ST_TNK_PMPH	2084660.3	751956.9	5927.94	SurfaceWater	SW	MODULAR STORAGE TANK PUMPHOUSE	Modular Storage Tanks (north of SEPs) no longer exist
OU1EFF	2084260.28	747697.14	5912.23	SurfaceWater	SW		OU1 GW treatment system disrupted

**Table R1**  
**Additional "No Aquatic Exposure" Surface Water Sample Locations**

LOCATION CODE	LONGITUDE	LATITUDE	ELEVATION	Media Type	Sample Type Code	Description	Rationale for NAE <sup>1</sup>
RS2	2084517.31	748436.84		SurfaceWater	SW	INFLUENT PRECIPITATION SYSTEM TO T900B	Building T900B and treatment system no longer exists
RS5	2084517.31	748436.84		SurfaceWater	SW	MICROFILTRATION SYSTEM EFFLUENT T900A	Building T900A and treatment system no longer exists
RS6	2084517.31	748436.84		SurfaceWater	SW	LEAD GAC EFFLUENT FROM T900B-NO LONGER IN USE	Building T900B and treatment system no longer exists
RS7	2084517.31	748436.84		SurfaceWater	SW	TREATED GAC EFFLUENT FROM T900B-NO LONGER IN USE	Building T900B and treatment system no longer exists
SPP DIS GALLERY	2085339.371	751751.394	5865.74	SurfaceWater	SW	SOLAR PONDS PLUME TREATMENT SYSTEM DISCHARGE	Solar Ponds Plume Treatment System discharges to the subsurface
SPPDGA	2085353	751762	5864.24	SurfaceWater	SW	SOLAR PONDS PLUME TREATMENT SYSTEM DISCHARGE	Solar Ponds Plume Treatment System discharges to the subsurface
SPPDGB	2085425	751834	5857.61	SurfaceWater	SW	SOLAR PONDS PLUME TREATMENT SYSTEM DISCHARGE	Solar Ponds Plume Treatment System discharges to the subsurface
SPPMM01	2084912.781	751627.877	5896.98	SurfaceWater	SW	SOLAR PONDS PLUME METERING MANHOLE	Not a surface water station
SPPMM01EAST	2085460.015	751765.691	5862.08	SurfaceWater	SW	SOLAR PONDS PLUME METERING MANHOLE	Not a surface water station
SPPMM02	2084826	751614	5900.21	SurfaceWater	SW	SOLAR PONDS PLUM TREATMENT SYSTEM INFLUENT	Not a surface water station
SPSUMP1	2085269.141	751641.535	5877.8	SurfaceWater	SW	SOLAR POND SUMP ON WALNUT CREEK	Not a surface water station
SW00196	2084030	752855.288	5919.53	SurfaceWater	SW	Passive Seep Interception and Treatment System effluent (discharge pipe from carbon steel tank)	Landfill closure reconfiguration near East Landfill Pond - sample point no longer exists
SW00296	2084024.06	752855.648	5921.81	SurfaceWater	SW	WEST SIDE OF OU7 LANDFILL POND, SAMPLE POINT BETWEEN TWO CARBON VESSELS	Landfill closure reconfiguration near East Landfill Pond - sample point no longer exists
SW00396	2084018.3	752855.648	5923.39	SurfaceWater	SW	OU7 LANDFILL SETTLING BASIN	Landfill closure reconfiguration near East Landfill Pond - sample point no longer exists
SW087	2084793.375	751234.125	5930.94	SurfaceWater	SW	ITS MANHOLE NORTH OF SOLAR POND 207A, EAST INFLOW TO MANHOLE	Not a surface water station
SW088	2084793.375	751234.125	5930.94	SurfaceWater	SW	ITS MANHOLE NORTH OF SOLAR POND 207A, WEST INFLOW TO MANHOLE	Not a surface water station
SW094	2085273	751638.125	5878.54	SurfaceWater	SW	PIPE ON EAST WALL OF ITS SUMP HOUSE	Not a surface water station
SW095	2085273	751638.125	5878.54	SurfaceWater	SW	BOTTOM OF VAULT OF ITS SUMP HOUSE	Not a surface water station

**Table R1**  
**Additional "No Aquatic Exposure" Surface Water Sample Locations**

LOCATION CODE	LONGITUDE	LATITUDE	ELEVATION	Media Type	Sample Type Code	Description	Rationale for NAE <sup>1</sup>
SW13494	2083963.701	748000.235	5955.66	SurfaceWater	SW	B881 FOOTING DRAIN ON HILLSIDE OUTSIDE OF SECURITY FENCE SOUTH OF THE MIDDLE OF BUILDING AND WEST OF GS24	Building 881 footing drains no longer exist
SWRWS	2078318.37	747905.18	6099.85	SurfaceWater	SW	RAW WATER STORAGE POND	Raw Water Pond sample spigot no longer exists

<sup>1</sup>NAE - No Aquatic Exposure. Data is not representative of surface water where the potential exists for human or aquatic receptor exposure, and accordingly, is not used for the RI/FS and CRA. See Data Processing Criteria in Appendix A of the RI/FS Report, Volume 2, Attachment 2, Section 2.2.

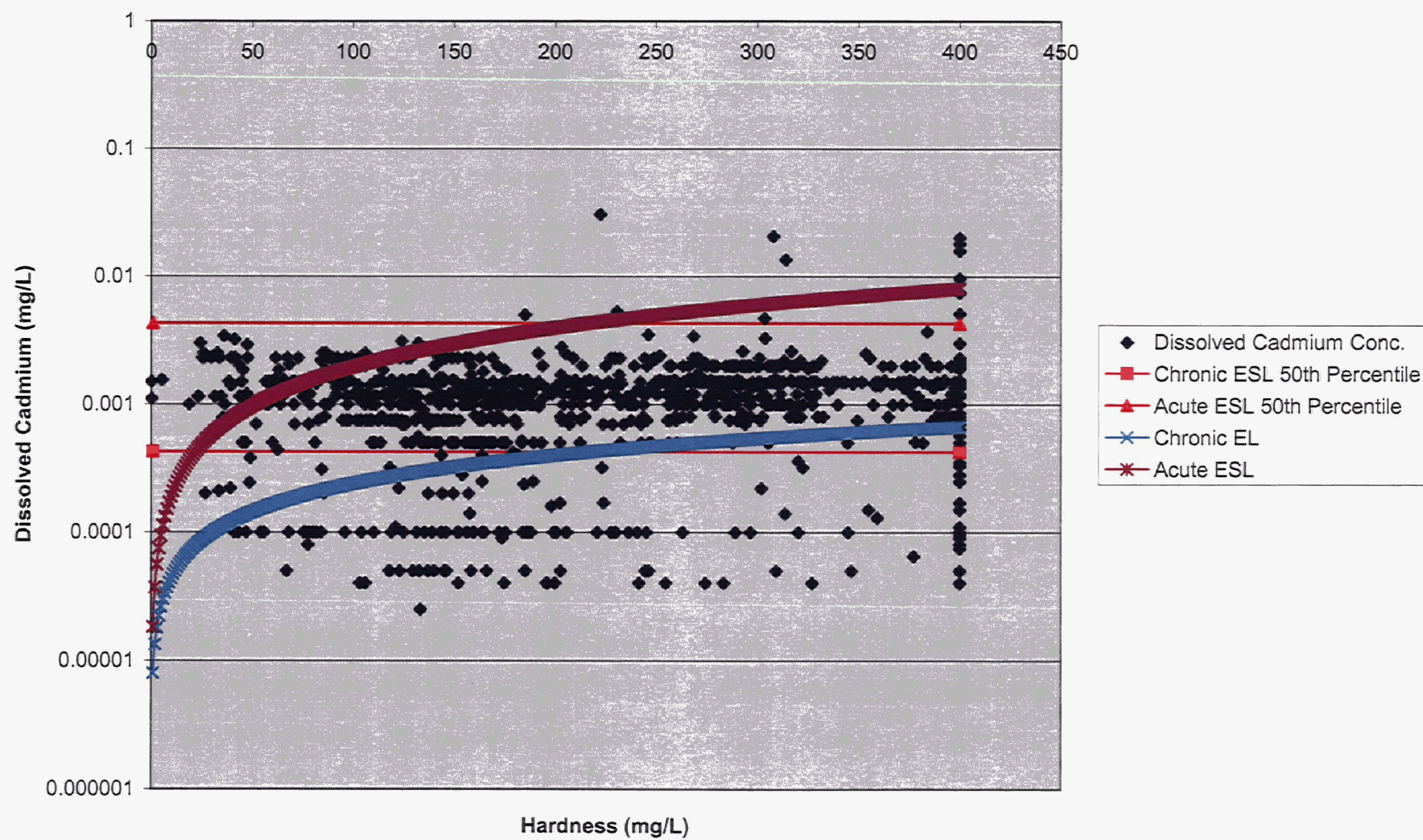
SW - Surface Water







Figure R2  
Dissolved Cadmium



15/8  
8/5/8

Figure R3  
Dissolved Silver

